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The Meaning of Functional Disease

The time to arrest disease, to cure it, is at the stage when it is "simply functional." The slight disturbance of today may tomorrow be an incurable organic disease. How important, then, are the minor ailments; how great the physician's duty with regard to them

A WOMAN was seized with vomiting; it continued with but slight intermissions, and she died from the consequent exhaustion. At the autopsy no lesion of the stomach or any other organ could be found. The malady was "simply functional"—yet it killed the patient.

To many physicians the term functional is considered synonymous with imaginary or hysterical. No disease is deemed real unless it is accompanied with gross material lesions; and since no remedies are known that will rebuild lost cells, pessimism as to drugs and consequently a quick resort to surgery follow as matters of course. The worst of this is the dreary prognoses it entails, predictions disastrous to the patient, and little less so to the physician. By the time several patients have been informed by the doctor that there is no possibility of aid for them except in mutilation, and some less scientific practician of the irregular brands steps in and works a cure, clinically speaking, the reputation of the regular profession gets down to a low ebb.

The difficulty begins at our colleges in the excessive attention paid to anatomy and dead pathology, the neglect of physiology and the study of pathologic function. We study dead bodies—we treat live men. The inexperienced student fails to recognize this truth, and when he comes to put into practice the lessons he has learned at the medical college he finds them inoperative, and loses out.

All disease begins with aberration from physiologic function, and the establishment of gross or microscopic lesions is only the sequence of the functional disorder—the ashes of a burned-out fire. Our study should be mainly of function, and we should be ready to recognize aberrations from the healthy, regular, harmonious operation of the entire human machine and to apply the remedies that will restore healthy equilibrium.

The Book of Books, the Laboratory of Laboratories, lies before our eyes in the sickroom—the patient—the Book wherein Nature is recording her operations.

Anatomy is of value, as it enables us to study physiology. The cadaver on the dissecting table is of use to us only in so far as our imagination is able to vivify it, to place before our mental vision the man who once inhabited it, and to trace the malady that brought this worn-out case to the table.

Unfortunately the limitations of the human intellect are such that too often the student stops when the preliminaries are mastered and fails to push his studies to the legitimate conclusion. His capacity for the acquisition of knowledge is sated, and he must wait for the slow growth of his mental powers and the grind of experience to complete the work. The true physician continues to acquire useful knowledge as long as he lives and practises; but unfortunately most of this priceless acquisition dies with him. Under the old system the apprentice learned from his preceptor the most valuable of his medical lore, and that of a sort that enabled him to utilize his college opportunities far better than the present student does.

It has been objected that the study of disordered function and its treatment tended to make of the practician a superficial observer and to render his therapeutics a sort of easy, coin-in-the-slot method, limiting his purview to the surface while the true disease went along unseen below. Nothing could be further from the truth. The study of diseased function leads inevitably to the recognition of the causes of the disorder, and their removal follows as naturally as conclusion from premises. As a rule the remedy that restores physiologic balance is that which removes the cause of its loss. Not necessarily, for removal of the original cause may not be the leading indication, curative, or even possible. One must avoid making fetishes even of the most praiseworthy maxims. The judge should not be "under the thumb of a '*caveat emptor*.'"

The study of aberrant bodily function does not lead to grand-stand plays, to the awe-inspiring spectacle of the surgeon—the Man of Blood—and his terrifying work. It is the work that builds up slowly but surely the confidence of the community in its doctor—"the old doctor who knows our constitutions," and in whose skill we rely with the certainty that although death is in the end inevitable it will not come to us prematurely, but that every possibility of prolonging our lives will be first exhausted. "Die we may, and die we must," but we do not want to die until we must. The man who has for years made a careful study of our constitutions and knows exactly where to lay his hand on the source of every difficulty that arises is too secure in his position to be disturbed by any competitor.

The field for our professional work is likewise widened, for aberrant function is manifested long before the patient has to stop work and take to his bed. This also tends to transform the physician from an attendant on the sick to an adviser in comparative health, his duties changing to those of anticipating and preventing disabling disease. This furnishes a remedy for the greatest evil of our lives, the uncertainty of our incomes, for it tends toward a yearly salaried method of compensation, instead of waiting till a man is stricken down, unable to earn money and pay for our services.

Disease is always functional before it is anatomic. Cancer itself must commence with functional derangement, and when we find the secretion of hydrochloric acid by the gastric glands uniformly below par, it is time to get busy and ask why. Cancer has been appropriately termed a rebellion of cells; and why do rebellions occur if not from misgovernment? If any set of cells has been persistently fed with toxic blood, and all their protests disregarded, the time may come when endurance ceases and a revolt follows. Better pay more attention to the distress-signals and institute reforms in time to retain their allegiance. While this is used as an apt illustration of the state of affairs, we are by no means sure it is not in reality a true explanation of what occurs—Virchow himself asserted that the individual cells possessed the power of conscious volition, and the more they are studied the more

probable appears the literal truth of this statement.

Perhaps the greatest advantage accruing to the study of pathologic function is to be found in the engrossing interest of the pursuit. The practice of medicine becomes a charming avocation when one gets to investigating the workings of the live human body, and learns the powers of various remedies in influencing them. When we learn to recognize deviations from health and apply exactly the right remedy to restore healthy action, and then find our calculation proves out, the expected results following unerringly, we begin to be absorbed in the work. The comfort of being able to speak positively and knowing we will make good is indescribable to one who has dwelt years in the realms of uncertainty.

This seems Utopian to those who have not mastered the secret. It did to us before we had passed the initiation and taken our degrees.

Strong souls within the present live;
The future veiled, the past forgot;
Grasping what is, with hands of steel,
They bind what shall be to their will.
—Lewis Morris

EPISTAXIS AND HOW TO TREAT IT

Usually epistaxis is a trifling matter, curing itself when the vascular pressure has been reduced to a proper point. Little is needed as to treatment, says Beverly Robinson; in *The New York Medical Journal.*

In ordinary cases applications of cold to the forehead or in the nose are uncalled for and unwise. The hemorrhage often is salutary in the young, and even in typhoid fever, hepatic cirrhosis and nephritis it may be advantageous. If excessive, it should be stopped, of course. In that case cold may be applied, with astringents, or pressure on the nostrils. If these do not suffice the nostrils should be plugged. A simple method is by packing the cavities with absorbent cotton, a strip being made into a little roll and packed in with a stiff probe. This should be carried back to the posterior nares. If, as is rarely the case, these must be plugged, Steele's probe is preferable to Bellocq's sound, as it can be used in a very narrow, deflected passage. The plug loosens by secretions within forty-eight hours, and should be removed.

Profuse hemorrhages come from the septal artery near the anterior nares. Atrophic catarrh frequently attends; or past middle life arteriosclerosis may be present. With a good light, apply to the ulcer a saturated solution of copper sulphate once or more. A few cases may defy treatment; the blood will not clot, and the bleeding may be fatal.

Is there any case of nasal hemorrhage that a full dose of atropine will not stop?

MEDICAL SUPERSTITIONS AND MEDICAL PROGRESS

We are all for progress. We believe in the steady advance of mankind along the road of evolution, and we are, everyone of us, severally conscious that we occupy a place in the front rank of the advancing army. If we see a comrade who is ahead of us we know he is too far, and try to get a holt on his coat-tails to yank him back into line. If he is beyond our reach we cry "Deserter!" and call on the rest to join us in shooting at him. Advancing means going the way *we* want to go, and its rate should be that which suits us.

However, armies do not win campaigns by simply advancing; and we may well pause occasionally to ask whether we are really progressing and by the best roads. Turn back to the days of good Queen Bess, and hear what Shakespeare had to say of the remedies accredited in the era of Macbeth. The witches formed their prescription of these ingredients: Poisoned entrails; toads; snake's fillet; newt's eye; frog's toe; bat's wool; dog's tongue; adder's fork; blindworm's sting; lizard's leg; owlet's wing; dragon's scale; wolf's tooth; witch's mummy; shark's maw; hemlock root; Jew's liver; goat's gall; yew slips; Turk's nose; Tartar's lip; stillborn babe's finger; tiger's chaudron; baboon's blood.

No, despite the honorable Zach., we do not use any of these as remedies nowa-

days, excepting hemlock root, from which we obtain cicutine. But, do we really *know* if any one of these weird drugs is capable of affecting the bodily functions, or that it does not? We *know* neither the one nor the other.

Modern science has deserted these absurd remedies because the superstition and ignorance on which their action was alone based have departed. They exerted a strictly suggestive power over the patient who heard the weird chant and saw the fearful and wonderful brew being made. We are far above such ridiculous, such childish claptrap nowadays. We do exactly the same worship, it is true, but it is before the shrine of Mrs. Eddy—and that's different.

The effect of the witches' broth was wholly suggestive, yet there is not one of the ingredients that may not contain a true remedial principle—worth as much to the profession and humanity as a German synthetic or a new serum.

He who has conquered doubt and fear has conquered failure. —James Allen.

STROPHANTHIN

A. K. Stone contributes to *The Boston Medical and Surgical Journal* an interesting paper on the intravenous administration of strophanthin in other than cardiac disease, with special reference to its use in collapse in the course of pnuemonia.

Dr. Stone says that strophanthus seeds, as supplied in the market, are not derived from the same plant, but in the same package are found seeds of several varieties. The strength of the derivatives from these is not the same.

Strophanthin is soluble in water. An obstacle to its general use is found in its irritant action on the stomach, and the pain caused by its subcutaneous administration.

In 1906 Fraenkel reported his experience with the intravenous use of strophanthin in a series of cases of broken cardiac compensation, with wonderful and immediate results from the action of this drug, which seems to have solved the problem which had long perplexed the clinician, giving a rapidly acting cardiac stimulant to be used in desperate cases where prompt results are required!

The objection which Stone makes to the digitalis preparations is their slowness of action, sometimes allowing death to take place before the physiologic effect has been produced; while in other cases unfavorable results, even to death, may develop from the cumulative action of the drug. We may say here that neither of these objections applies to the water-soluble digitalin, which gives its effects within a few minutes and is not liable to cause cumulation, because it exerts less vasoconstrictor action than any other of the digitalis glucosides.

Fraenkel found that one milligram of strophanthin introduced into the venous circulation produced no unpleasant reaction, and called forth a prompt response on the part of the failing heart, showing itself by the slower and stronger beats. The change appeared in five to fifteen minutes and persisted for twelve to eighteen hours, frequently lasting several days. The blood-pressure usually improved although not excessively, and in many cases marked diuresis set it.

Subsequent reports generally confirm Fraenkel, but some cases are found not to respond to strophanthin at all; while others, although showing little effect on the heart, seem to render diuretics previously inert effective. The best cases for strophanthin appear to be mitral disease with failing compensation; next arteriosclerosis with little renal involvement, but dilated and incompetent heart. Pure renal cases with struggling heart were often retarded in their progress and among these most of the unpleasant results recorded occurred.

"It seems significant that men especially interested in proprietary preparations of digitalis failed to get the results presented by Fraenkel. Practically all the others were in accord with him, and announced that they had at last found a cardiac stimulant which would act promptly and efficaciously, and that in certain selected cases

where the heart-action was impaired there was nothing that would compare with strophanthin."

A number of deaths were reported as apparently attributable to strophanthin. In some it is doubtful if this were at fault. People with advanced heart-diseases are liable to die suddenly.

The action of strophanthin Stone pronounces practically the same as that of digitalin. The pulse is slowed and becomes stronger; if pushed, great slowing of the heart is produced, with symptoms of heart block, then fall in blood-pressure, rapid irregular heart, and death.

In some cases where death occurred after the use of strophanthin, repeated and frequent doses had been given. More frequently strophanthin was given to patients who had already had digitalis pushed to the limit of safety, the sudden addition of strophanthin inducing collapse and death in a short time. Ten deaths are reported in this paper. Personally Dr. Stone has seen no serious symptoms, nothing more than a moderate retardation of the pulse and a sense of faintness which lasted about twenty-four hours—a condition showing plainly that no more strophanthin or digitalis could be borne by that patient.

In the introduction of strophanthin great care must be taken that the solution is injected into the blood-stream. If it gets into the surrounding tissues or the vein wall, it will be irritant and the resulting inflammation is very disagreeable. Any vein that can be most easily got at can be used and used repeatedly without discomfort. A bandage applied above the point of injection engorges the vein, rendering the introduction of the needle more easy.

One patient received 45 intravenous injections during four months.

Using strophanthin in a series of pneumonia cases, Liebermeister stated his belief that it would enable some severe cases to be carried along until the patient eliminated the pneumococcus toxin. Stone's experience confirms this opinion, and he believes that if the physician were on the spot at the critical moment life might be saved by the prompt administration of this drug.

The first case he cites was one of pneumonia, the consolidation involving the lower and middle lobes of one lung, the heart in good condition with good sounds on entrance, four days after the attack commenced. Later he presented delirium, the blood-tension low, the pulse not strong. About the twelfth day of the disease the heart-beat suddenly became intermittent and of poor quality; he was practically pulseless. The blood-pressure was 115 millimeters. One milligram of strophanthin was given intravenously; five minutes later the blood-pressure had risen ten millimeters, thirty minutes later it had risen to 130, and remained there for twenty-four hours. The heart became regular, the pulse returned to the wrist, remaining of fair quality through the next day. A second injection was given twenty-four hours after the first; from this time, although very weak, there was uninterrupted convalescence. The urine, which had been forty to fifty ounces, the day after injection jumped to ninety ounces and remained above sixty for more than a week.

The second was an alcoholic case, sick five days on entrance, pulse full, bounding, equal and regular, consolidation of lower right lobe. The patient looked gray, very sick, and was very delirious. The day after entrance he was given strophanthin which had no apparent action. Three days later the nurse suddenly reported the patient as dying; he seemed to be gasping his last, the pulse could barely be felt. An intravenous injection was given at once, the pulse reappeared and became stronger and his condition was the same as it was the preceding day. Twelve hours later the pulse again weakened and he received a milligram of strophanthin. The next day he was doing very well and gave no further cause for anxiety.

Following the use of strophanthin the urine rose forty to sixty ounces and remained high during the week.

The third case was similar to the first.

In another case where cardiac exhaustion developed, which responded to no ordinary

stimulation, half a milligram of strophanthin was injected intravenously. The improvement lasted until the following evening. The following morning the heart suddenly went to pieces and the patient died before relief could be given. The autopsy showed lobar pneumonia with a flabby heart due to cloudy swelling. In this case smaller doses were given than Dr. Stone thought desirable, a full milligram being supposed to be an unsafe dose.

In another case of attempted carbolic-acid and gas poisoning, suicidal, strophanthin was used with like good effects. In sudden post-operative collapse, the pulse almost imperceptible, and about 150, fell to 120, becoming stronger, within five minutes after an injection of a milligram of strophanthin. From that time the pulse grew stronger and the patient was no longer a source of anxiety.

The last case was a man of forty-seven, who entered the hospital delirious, very sick, with a ghastly gray color. Chronic alcoholism was the diagnosis. He was put immediately on the "dangerous list." Two days later everything seemed to be going to pieces. He was given a subpectoral infusion of salt solution and the stomach washed out. The blood-pressure rose from fifty millimeters to about seventy, otherwise he was no better. Late in the afternoon he was given a milligram of strophanthin intravenously, shortly after which the blood-pressure rose to 90 millimeters, and gradually increased until five days later, when it was 132. The stimulation of strophanthin appeared to turn the tide toward recovery. Up to that time death had appeared to be inevitable.

This is one of the most important contributions on the subject of strophanthin that has yet appeared, especially as to its employment for collapse occurring from heart-failure in various affections, and not alone in pneumonia. This application of strophanthin is easy, and the glucoside can now be had of exceptional purity. In no instance is the value of the skilled physician more strikingly shown than when in such cases he steps in, and by the prompt application of exactly the right remedy, prevents a death which would otherwise be inevitable, this being evident to every onlooker, professional and non-professional. Altogether we consider that Dr. Stone's suggestion is one of the utmost value, and that every physician in active practice should add hypodermic tablets of strophanthin, one milligram each, to his hypodermic outfit. It is well to be prepared for such emergencies, since no one can tell when they may arise.

As to a comparison of strophanthin with the Germanic digitalin when given in full doses, that is, up to 1-10 or 1-4 grain, this is a matter for future consideration.

The radicalism of a man is more often the eccentricity of doing a thing instead of talking about it.
—David Swing.

DELAYS IN PUBLICATION

We have had to make a good many excuses of late and, we fear, have told a good many whoppers. Fact is, we have received so many excellent articles, all of which we have been anxious to publish, that we have made promises as to when they would appear, but which we have been unable to fulfil. Under the circumstances, we must beg our contributors to bear with us. While there has been a flood of good things, we do not want any less. Furthermore, we hope that those whose articles have been delayed in appearance, or possibly have been laid aside entirely, will not take offense, but will try again. Every man who has something to say is welcome in the CLINIC columns.

Again we want to urge our contributors to send us short articles and practical articles —especially those on medicinal therapeutics. We can find room for fifty to seventy-five one-column contributions of this kind in each number; while we have room for only eight or ten of those of three to five pages each. Other things being equal, the shorter the paper the more quickly we can publish it.

If you have had an experience in your practice that you think will help others tell, us about it. Do not try to make a studied

or "finished" article; write it to us as you would to one of your own family, simply, directly, without frills. If it needs any "fixing up", we shall be glad to do it for you. Short, practical things of a therapeutic nature from the men on the firing line—that's what we want.

Send in your stuff, and we'll print it as soon as we can—or let you know why not.

How virtuous man, incensed,
Doth roar and bellow,
To have the law against—
The other fellow.

—Brand Whitlock.

THE POSSIBILITIES OF PREVENTIVE MEDICINE

By "preventive medicine" we usually mean the measures taken by the state or municipality to prevent the occurrence or the spread of disease, such as proper sewage disposal, pure-water supplies, food inspection, proper drainage, street cleanliness, factory legislation, vaccination, quarantine, the destruction of disease-bearing insects, modern methods of treatment, etc. Along these lines sanitary science is now making progress at a tremendous rate, and largely as a result of this work the average length of human life has increased nearly twenty years in a century, while the number of the sick has grown correspondingly smaller—as the doctor has good reason to know.

But while the number of deaths from communicable diseases is decreasing, there is no corresponding falling off in those due to the socalled chronic affections, those due to the degenerations so common after middle life. On the contrary, they show a constant and alarming increase. For instance, the number of deaths from kidney and heart diseases and apoplexy in the state of Massachusetts increased nearly 133 percent between 1875 and 1897; while since 1880 in the whole registration-area of the United States the deaths from diseases of the heart has increased 149 percent.

The prevention of deaths from renal, cardiac and other chronic diseases is just as deserving of attention as those due to acute infections; but the former conditions must be controlled by individual prophylaxis, as the latter have been and are being prevented by the intervention of the state. Certainly it is of just as much importance to protect from disease a man in the prime of life, at the stage of his greatest productive ability and when he should be worth the most to the world, as to save the lives of the little ones in the slums.

These degenerative diseases are due in a large degree to the hurry and worry of modern life. We are intemperate, not only in what we drink but in what we eat. The bowels of "the idle rich" are clogged with the rotting waste of a too-rich and too-abundant dietary, and the flame of disease is fed by other poisons, such as alcohol and tobacco. We neither work normally nor play naturally. The layman needs to have read to him the life-saving gospel of "clean out, clean up and keep clean," and this duty inevitably falls upon the doctor—the family physician.

Here the doctor of the future will find one of the most promising fields for his talents. If he is wise he will be making his plans for work of this kind—and the laymen of the better class will soon learn that it is more profitable to pay the doctor a generous fee to keep him well than to wait till he is incapacitated before he calls for help.

The importance of this preventive field has at last been realized by one of the large insurance companies, which has organized a "health bureau" which will give its policy holders expert advice on how to keep well. A medical examination will be given every two years free of cost; the company's medical department will give personal replies to all inquiries concerning this important subject and will cooperate with the individual's family physician when conditions arise demanding treatment, and free "health bulletins" are to be issued to keep the policy holders in touch with all progress along lines of health promotion and disease prevention, This is purely a business proposition with the insurance company. The longer the average of human life, the greater its profits.

Why should it not also be a "business proposition" for the doctor? We know of one bright young man of our profession who thinks it can be so made. For a modest fee he proposes to make four examinations of the urine annually for every subscriber to his plan, also to do such other work as may be necessary to keep advised of the physical condition of each of his patrons. By doing this he will be able to detect disease at its very inception, when it can be cured entirely or its danger reduced to a minimum. A little readjustment of the diet, proper attention to the toilet of the bowel, a slight increase of the urinary output, proper equalization of the circulation through proper medication—these may be sufficient to prolong for many years a life which would otherwise be sacrificed in one.

Why should not other physicians qualify themselves to do this work? A well-equipped private laboratory, may not save as many lives as a bacteriological inspection of the city milk, but it will be of service to the best elements in your community. If you haven't time to do laboratory work yourself, cooperate with some man who will do it for you. The doctor who combines skill, intelligence, diagnostic acumen and therapeutic common sense will not have to go begging for business.

Ice is a substance frequently associated with a tumble in winter, a tumbler in summer and a skate the year round.—"Gideon Wurdz."

THE ACTION OF PURGATIVES

Underhill says that saline cathartics cause an intestinal secretion by nerve stimulation, with inhibition of absorption. Peristalsis is secondary. Osmosis plays but a subsidiary role, mechanical irritation being absent. Most vegetable cathartics produce their effects by whatever channel introduced, although their subcutaneous injection may be followed by untoward results.

Unlike the salines, the essential factor of vegetable purgatives appears to be their presence in the blood. Their effective principle is the production of local irritation, as a very active peristalsis, hurrying the intestinal contents along.

Different drugs exercise their influence on entirely different portions of the intestinal canal, as follows: A purgative oil may influence the movements of the stomach and intestines, or of the stomach alone, according to the presence or absence of decomposing products. Senna shows no action until the large bowel is reached. Peristalsis may be of two types, pendular movements without progression of the intestinal contents, or peristalsis by which the contents are passed along. The latter type alone is affected in purgation. In complications where it is desirable to cause hypersecretion, salines should be avoided, but they are indicated in conditions of sluggish secretory activity. Since this necessitates increased blood supply to the heart, the drawing of blood from other sources of the body may or may not be desirable. The increased secretion in the alimentary canal accounts for the efficacy of the salines in removing fluids from the body in dropsy.

Vegetable cathartics are contraindicated when the alimentary canal is already irritated. They are indicated where the intestinal movements are sluggish, and some of them might be given when specific portions of the tract need stimulation.

ARE YOU A BACK-NUMBER?

This world has very little use for a back-number. It is about as bad to appear to be a back-number as to be one. If a man persists in the ways of a former day, using the implements, practising the technic, persisting in the habits that characterized the generation that has passed into the sere and yellow-leaf stage, he is going to be considered a back-number. His words may be the eternal truth, his views just and right, his advice the very best that can be given—but they will all be discounted by the view that he is antique, out of date. The general ordered his troops to do what would have saved the day, but they did not obey because they were afraid he was wrong; and the battle was lost.

Get in line! Get abreast of the leaders! Let all folks understand that, whatever else you may be, you are up-to-date; whatever else you may *not* be, you are the best going. Dress in style. Use modern methods and modern drugs—the scientific certainties, the arms of precision. Let Grandpa enjoy his muddy extracts and decomposing tinctures—it pleases the poor old soul, and he has crystallized—he can't learn the new; but *you* use the alkaloids. Don't make any mistake—your patients will catch onto the difference.

Catch on? They *have* caught on; and they're waiting to see how soon you do—saying nothing, out of affection for you, not willing to hurt your feelings.

And for goodness' sake, pension old Dobbin! Burn that rusty old bicycle, and get an automobile. Think we like to see *our* doctor ride or drive up, looking like that, when the De Smythes next door, and Ap Joneses across the way, and Von Brauns at the corner have their doctors' big motor cars standing in front of their doors by the hour?

Get a hair-cut, and a shampoo, and some new glad rags; brush the dust from your boots and the cobwebs from your brain; loosen up your purse-strings and your cerebral neurons. Go to the postgraduate and rub off some of the rust. Then get an automobile.

Can't afford it? Doctor, you've got to afford it. You can't afford not to.

EURCPEAN DOCTORS AND NURSES

Dr. Alfred D. Kohn, member of the Chicago Board of Education, is reported as having expressed himself quite emphatically on the merits of European doctors and nurses as compared with those of our own country. They are long on pathology over there and short on treatment; they care much for diagnosis and little for patient. They know dietetics and cook food better, but have less judgment and take less care in feeding the patient. Rest, quiet and matters of that sort are given little attention. They know how to charge. Their surgeons are as scientific and skilful as ours, but we do the work better. Their anesthetics are not as good as ours and they are not as cleanly. Except in England, nursing there is a grim joke; they haven't the class of nurses we get here, and in many cases only rely on men orderlies.

We doff our beaver to Dr. Kohn. Despite the Teutonic appearance of his cognomen he is evidently open-eyed and not ashamed of his country, or afraid to speak his belief.

Keep your words as free from stickers as possible, for you don't know how soon you may have to eat them.—W. G. Dobrow.

LEADERS, OR FOLLOWERS?

People ask why the alkaloids do not receive the endorsement of the "leaders" in medicine. They do—of the real ones. But who are the "leaders?"

The leaders of men are, or try to be, representative. It is not alone in the field of politics that men trim their sails to catch the breeze of popular approval, but this rule holds good in all walks of life. Certainly in mercantile circles men seek to supply that which the public will buy. It is even suspected that something of the sort may be seen in the pulpit. Therefore it should not be a matter of surprise if in the medical profession popular approval should have its way.

A distinguished surgeon, in a great city not far from the banks of the Mississippi, was asked why, since in conversation he gave his approval to hypodermic anesthesia, he did not use it in his practice and publish articles in defense of it? His reply was characteristic and will bear thought.

This doctor stated that he had a large practice among wealthy people; if his competitors had an opportunity to spread the report that he was "making experiments" upon them with new and powerful drugs, he would be financially ruined. He dared not make use of the method, for that reason, until it had been so far established that he would in a manner be compelled to adopt it or suffer in reputation as a "back-number."

Hæc fabula docet that a radical improvement in medical lines must commence from the bottom and work its way up. It must establish itself in the affections of the masses, both of the people and the profession, before the leaders dare to give their assent to it.

This of course applies to the average man. There are others.

There are men who rather enjoy lifting up their voices for the truth, even though it should not happen to be popular just then. There are men to whom truth and equity are more important than popularity and the financial emoluments pertaining thereto. There are men who would be satisfied to wait a century or more for vindication; and there are even men who would be satisfied to be right, although never on this earth would they be vindicated. But, naturally, these men are few in number, and one can hardly ask of average humanity to rank itself on such a plane. Were this possible, these men would not be the rare exceptions they are. Men of this lofty type have never been common, nor have martyrdom, poverty, insignificance, the aversion of one's fellow-beings ever inspired many human souls as being desirable.

"Remember that the pathway of the soul is not a steady ascent, but a hilly and broken one; and do not become pessimistic, for the pessimist poisons his very blood and darkens the horizon of the sun of joy."

PURE FOOD—AND IMPURE

From *The Food Law Bulletin*, July 28, we glean that the following canned goods were condemned by the government, viz.:

J. B. A. Kern's rye flour (blended), being a mixture of rye and wheat flour. Van Camp Packing Company, canned peas, the weight of these being one ounce less than stated. The Heekins Spice Company of Cincinnati, for its White Cap lemon flavor, which was shy on lemon oil. The Woodcross Canning and Pickling Company (of Utah), for cherries, the cans being under weight. Price & Lucas' Old Homestead blended cider vinegar, which proved to be a distilled vinegar artificially colored. The Pacific Coast Syrup Company, San Francisco, for Toboggan maple syrup, a mixture of maple and cane-sugar syrups. The Powell-Sanders Company of Spokane, for pepper containing cracker crumbs, ground nutshells and fruit pits. Alex C. Harsh & Company, Nashville, Tenn., for white oats containing barley. The Syracuse Canning Company, Utah, for tomatoes short in weight. The Charles Meisezahl Manufacturing Company, New York City, for mineral water purporting to be imported, but really manufactured. S. J. Van Lil, Baltimore, for Navy Brand catsup, said to have been prepared from choice ripe tomatoes, but really from pulp screened from peelings and cores of tomatoes, the waste material from tomato-canning factories.

This *Food Bulletin* is published every week, and we purpose to give a list of the judgments rendered under the Food & Drugs Act for the information of our readers, as a purchasing guide, that is, as to what not to purchase. We like maple syrup and are willing to pay the price for it, but we do not want to pay the price and then receive an imitation. We are willing to pay for peas, tomatoes or cherries the market price, but we do not like to pay for a two-and-a-half pound can and then get only two pounds, two and one-half ounces. Further, we believe that the publicity which we give to these judgments will largely increase the efficiency of the departments, and as loyal citizens we wish to do our part in this direction.

THE MYSTERY OF PAIN

Some day in the far-distant future there may arise a new religion, whose chief tenet will be that the Divine Creator equipped Man with Senses and endowed him with Reason, then turned him loose in a world thickly planted with all evils possible to a hell and all good things possible to a heaven, and left him free to make of it the one or the other. The power to turn all things to our good is ours if we choose to exert ourselves, to learn the true qualities of the bountiful resources about us and to utilize them. But it will not be in our day—it

is characteristic of mankind that he must try all the wrong turns of the labyrinth before he hits upon the right one.

Pain, physical suffering, is never natural to man. It is Nature's warning, her endeavor to attract our attention to a wrong perpetrated upon our body, a transgression of Nature's laws—and kindly, bountiful Dame Nature is as inexorable as Moloch when her laws are transgressed. For such sins there is neither mercy nor forgiveness; the debt must be paid on the day appointed. No Shylock was ever so inexorable in demanding his pound of flesh; and if the blood must come too, come it must, even though not so nominated in the bond. The burden of so managing as to save blood and life, yet pay the flesh, falls on the debtor.

Every envenomed dart of agony has been earned. The poet may sing:

"My curse upon thy venomed stang,
That shoots my tortured gums alang;"

but the curse recoils upon his own head, to whose witless mismanagement the toothache testifies. The writhings of colic are the penalty for many a gastronomic sin. Aches and pangs innumerable torment us for our filthiness in carrying a fetid cesspool about in our bellies.

The agonies of parturition endear the infant to the mother whose suffering it represents, and perhaps aid us in investing with some degree of solemnity, even of awe, our participation in the work of Creation. Can any thoughtful man comtemplate this divine function without somewhat of the priest's sentiment for his holy office?

The sufferings that follow an injury, or the eating of unwholesome food, or contact with poison-ivy increase our store of experience and our knowledge of things, and thus add to our value in the community.

The piercing arrows of cancer are no less due to natural laws, ignored and transgressed. It is true, we do not as yet know what these laws are—but let me advance a modern postulate for the consideration of the modern theologian—Ignorance of Natural Law is the Unpardonable Sin.

I repeat, cancer is not natural to man and results from his transgression of some law, as yet unrevealed. No better illustration could be given of the truth of our to-be-promulgated creed. We shall be stricken with this frightful malady, we shall see our loved ones writhe in its relentless grasp, until we are fairly driven from our lethargy and compelled to find its causes. Then we shall take the promising clues already in evidence and follow them up, until some fine day we shall stumble over the truth—to find that it has been all the time lying at our threshold in plain view.

THE TREATMENT OF COLLAPSE

A young doctor received as his first call in practice an urgent summons to an old man, whom he found in collapse. The case looked desperate, and the doctor didn't know what to do; so he told the family to place the man in a hot mustard bath, and keep the heat up by adding hot water. Meanwhile he ran home to consult his books. The man's sister was old and deaf, and so as soon as the man had been placed in the bath ordered hot water to be added at once. This soon restored the patient to consciousness, and after vainly expostulating he sprang from the tub despite the protests of the sister, and ran to his bed, where the doctor found him in a fine and salutary perspiration. Recovery ensued, and was very properly ascribed to the doctor's credit. He had secured an exact therapeutic effect as indicated, by the powerful stimulation of the cutaneous sensory nerve-ends. Reinforcement of the body heat was no mean factor also.

This indication is met in India by the administration of powerful local stimulants to the stomach mucosa. In treating the choleraic, dysenteric and pernicious malarial attacks common in that land, which if not quickly checked destroy life within a few hours, it is a common saying that a dose hot enough to bring the tears to the eyes will induce reaction and save the life. The following formula is an imitation and improvement of one of the Hindoo prescriptions: Chloroform, oil of cajuput, spirit of camphor and tincture of capsicum, each two

drams; pure ether one ounce. Mix; give a teaspoonful without dilution, repeating every ten minutes until reaction occurs. Repetition is rarely necessary—one dose brings the tears. The comments of patients on this dose would be unfit for publication. Many and many a promising attack of cholera morbus I have cut short by a single dram of this powerful mixture; many a chill I have aborted with it. In truth, Dr. ——'s "hot drops" won such repute in a certain section that every druggist near by kept them in stock and dispensed without troubling the deviser.

This is a better formula than any of the popular remedies for cramps and colics, because those who devised the latter thought they had to put in an opiate. It would be a fine remedy to take camping were it not that it is apt to blow out the cork and be lost, and we have something better in more modern shape. The indication is as quickly, as effectually and a good deal more pleasantly —possibly somewhat more safely—met by the use of the admirable combination of glonoin, hyoscyamine and strychnine arsenate. Glonoin sends the blood into the brain, relieves fainting, restores consciousness and relaxes vascular tension. Hyoscyamine confirms and prolongs this action, sustaining the great vital triad—brain, heart and lungs. Strychnine aids by vitalizing all the functions, and restoring the control of the central nervous system. What function does the arsenic fulfill? Well—but here we are, forgetting that we are not in the rostrum with a class of students before us—but talking to physicians who probably know more of these matters than we. So we will just stop here—if you know the part played by the arsenic you need no telling—if you don't, better read up.

LIME HUNGER

In *The British Medical Journal* for January 30, Luff treats of the use of calcium salts in various morbid conditions. Wright pointed out that deficient blood coagulability sometimes induced serous hemorrhages, and that these could be controlled by giving calcium salts to increase the coagulability of the blood. Examples of such serous hemorrhages are urticarias, edemas of the extremities not due to heart disease, liver or kidneys or to venous obstruction, and a form of headache known as "lymphatic." There is also a liability to epistaxis.

These headaches are more common in women. They occur as a dull, heavy, frontal aching, or frontal and temporal throbbing; sometimes occurring in any part of the head. They are generally present on waking, subsiding in some hours. They resist treatment effective with other headaches. The victims are usually lymphatic, with a tendency to edemas, anemia and physical and mental lassitude.

Ross showed in ten such cases the coexistence of low coagulability of the blood, and relief of both following the use of the calcium salts. Decalcification of the blood by the use of potassium citrate caused their recurrence.

Luff reports the results in 121 cases in which at least a year had elapsed since the treatment was instituted. Calcium lactate was the salt which proved most effective. Calcium lactate is soluble in 15 times its weight of water; the acid is readily oxidized, so that absorption is prompt. The lactate should be fresh, as it decomposes with time. The watery solution should be clear. Turbidity indicates chemical decomposition.

The adult dose given was a gram in solution an hour before each meal, this allowing time for absorption. The remedy was continued for six weeks. Constipation followed; which was relieved by senna, in infusion, taken at bedtime. Salines were avoided because they precipitate calcium salts.

Of the cases treated there were 45 of lymphatic headache, with edema; 37 were cured, 4 were not relieved. Relief usually appeared within three days. All presented lassitude, and improvement was secured also as to this. In other forms of headache the calcium salts were not of the slightest use.

Chilblains: All these cases presented cold hands and feet, with slight edema.

Out of 37 cases, 29 were cured, 4 benefited.

In all cases of boils there were cold hands and feet and slight edema.

There were seven cases of severe urticaria, with cold extremities and edema. None was dietetic. Six were cured, one not benefited. In six cases of flushing face there were cold extremities and generally palpitation of the heart. Four were cured.

Five cases of aneurism of the aortic arch were treated in hospitals with considerable benefit. "The drug seemed to encourage the deposition of the fibrin within the aneurismal sac, with recession of the swelling more rapidly than any other drug I have tried. In two cases the benefit was greater than had followed the use of the potassium iodide in large doses."

Calcium lactate was employed in three cases of hemoglobinuria with very marked benefit in all. Two cases of troublesome edema of the feet, neither cardiac nor renal and not due to local venous obstructions, had been treated without avail with drugs, massage, baths, electricity, etc. The coagulability of the blood was markedly deficient. Both were rapidly cured by calcium lactate. In three cases deficient coagulability was associated with vesicular or bullous eruptions. All had been treated without benefit but rapidly recovered on calcium lactate. Besides the above this remedy proved effective in erythema, lichen planus, gouty pruritus, pruritus ani and offensive perspiration of the hands and feet.

Of the cases detailed 78 percent were cured, 9 percent were benefited, 13 percent unrelieved by the treatment. In no case were any bad symptoms induced. Out of a large number not included in the above because complete data were not available, in three there developed symptoms certainly pointing to some commencing thrombosis probably caused by the calcium salt. In one there was a slight attack of venous thrombosis in the right calf; in the second slight numbness of the arms and legs with tingling; in the third noises in the ears and deafness. In all three the symptoms rapidly subsided when the calcium was omitted.

This is a suggestive paper. In all probability the showing would have been as good in the 13 percent of failures, had that careful attention been paid to emptying and disinfecting the bowels which we have learned to employ as a routine.

For many years my preference in treating disease in which lime was indicated, has been for the lactophosphate. This remedy when pure, which is not always the case as furnished by the pharmacists, is readily soluble in water. I have always looked upon it as the most readily assimilable of all the calcic salts. For some years I was accustomed to give ten to twenty grains daily, directing the patient to dissolve the specified quantity in a glass of water and take it at intervals through the day. I am convinced that much of the lime thus taken was wasted, and instead of this I have since used much smaller doses, with good results. If a small dose of the lime is constantly present in the stomach there will be continuous absorption during the entire day, and in the end more will be taken up than when a few bulky doses are given at rarer intervals. The combined use of calcium lactate and calcium chloride also has been suggested.

This treatment is especially valuable in the case of children who are liable to epistaxis and in whom a thin skin, with blue veins showing clearly through, indicate a predisposition to tuberculosis and other weakening diseases.

It is also an excellent remedy to be given during tuberculosis; and I feel sure that by its use I have many times saved that loss of one or more teeth which is prevalent among women. "For every child a tooth," is a common saying. But if the needs of the developing child are supplied by the addition of this extra daily dose of lime, there is less danger that the system of the mother will be drawn upon to supply it.

The danger alluded to in Luff's paper of inducing thrombosis by an excess of lime, is too serious to be neglected. For this reason I think that in many instances it is wise to employ the iodized lime, in the belief that the iodine will carry away an excess of

lime and prevent its remaining in the system. It might be thought that this being the case, the lime might be passed through too quickly to be effective, but this I have not found to be the case. For when there is a real lime hunger in the body, that is, a need of lime by any set of cells in the system, they will take up this substance from the circulation to whatever extent they may stand in need of it.

It is become increasingly evident the more deeply we investigate the action of drugs, that they should always be given with discretion and never irrationally. I am in the habit of comparing the problem before us to the regulation of a watch. When drugs are really needed they should be given with the object of restoring the deranged function to physiologic parity. and over-action should be avoided as carefully as under-action. This necessitates close observation at the bedside, and this is certainly not objectionable. To my mind it is the most important feature of the physician's work, and here he demonstrates his superiority over quackery of every description, and entrenches himself in his chosen fortress where he cannot be assailed.

Who bides his time, and day by day
Faces defeat full patiently,
And lifts a mirthful roundelay
However poor his fortunes be—
He will not fail in any qualm
Of poverty—the paltry dime
It will grow golden in his palm,
Who bides his time.
—James Whitcomb Riley.

RHEUMATIC FEVER

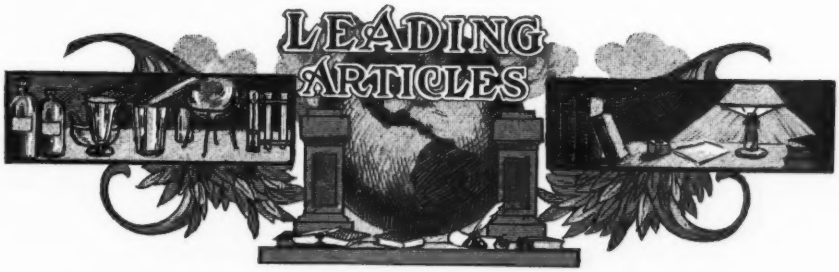
In the Therapeutic Section of *J. A. M. A.*, July 31, is epitomized Dr. Meakins' treatment for acute rheumatic fever. It consists in as complete antiseptic treatment of the mouth, throat and gastrointestinal tract as is possible. He keeps the intestines active with saline cathartics, checking excessive action with a little morphine, and administers "the best bowel antiseptic." This he considers to be salicylic acid, also claimed as the specific for rheumatism. He prefers the small doses of this drug, frequently repeated. Large doses should only be given for a day or two; small ones can be tolerated a long time. The author prefers the acid derived from plants as less depressing. This, however, is not all of the truth. Salicylic acid itself is not depressing at all, but the impurities usually present in the commercial grades of the synthetic acid are irritating to the stomach and likely to be depressing to the heart.

If a chemically pure synthetic salicylic acid is employed there are no such dangers attending its use. I have for years employed such a salicylic acid, using many pounds of it, and these statements are based on my experience. This acid is blue-white, without a tinge of pink or yellow, and is especially valuable for hypodermic use, since it unites with caffeine without the solution causing irritation and not showing any color whatever.

Dr. Meakins comes pretty close to our own method, in that he clears the bowels and uses small doses. However, he prefers sodium salicylate, whereas we use the free salicylic acid, giving a centigram every ten to thirty minutes, in order that there may always be enough of the acid present in the stomach and bowels to prevent fermentation. I have received many encomiums upon this method since I first announced it in CLINICAL MEDICINE, and up to the present time no record of its failure has come to me. Possibly there may have been failures; if so, I think my readers should know by this time that I am as earnestly desirous of receiving these as well as the records of successes. It is the truth, and only the truth, which we want in regard to the application of drug-therapeutics.

In my own experience, I will say, it has been a constantly repeated surprise to note how the severe forms of rheumatic fever subside under these minute but rapidly repeated doses of salicylic acid. This, of course, with the bowels being completely and thoroughly emptied.

There are, however, other factors to be considered, such as the acidity of the urine, the presence or absence of indican and the character of the food and habits.



Physiologic Laws Governing the Action of Purgatives

A study of the underlying principles governing the selection of purgative remedies and their intelligent combination—a paper which should be read with the utmost care by every physician

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WHILE the title of this paper is "Physiologic Laws Governing the Action of Purgatives," it is not my purpose to confine myself to the agents usually administered as purgatives, but to consider any or all of the influences by which the secretory and motor functional activity of the intestinal canal can be stimulated. I write as a clinician only.

Purgatives occupy such an important place in the treatment of disease and have been and are so extensively used that it would seem that the principles upon which their action depends would long since have become a matter of common knowledge, but experience has convinced me that such is not the case. In the healing art so much depends upon the practical application of these principles that every physician should aspire to a complete mastery of them and thereby be saved from dependence upon the half-knowledge of empiricism.

The Key to Intestinal Activity Is the Nerve-Centers

It should be remembered that the key to the secretory and motor activity of the intestinal canal and of the glands emptying their products into it is the nerve-centers. Success in any effort to secure evacuation of the intestinal contents depends upon the degree of success we have in arousing these centers to functional activity. Our success in that effort will depend not only upon the condition of these centers but upon the manner in which we attempt to approach them.

It appears that many of the agents causing disease in the human system exert a peculiarly sedative influence upon the nerve-centers presiding over the motor activity of the intestinal canal. As a consequence, deficient peristalsis, manifesting itself in deficient alvine dejections, is an early symptom of almost all diseases. This may or may not be accompanied by deficient secretion, but no matter how abundant secretion may be, if the motor centers are so blunted as to have their activity suspended and to be insensible to impressions conveyed to them, the intestinal tube becomes an inactive, motionless mass, which effectively imprisons its contents.

In the treatment of disease, if we undertake to restore motor activity to the intestinal tube, we have four classes of agents

which we may employ; or four modes of procedure at our command. By two of these we can stimulate the nerve-centers directly, by the other two, indirectly.

Direct stimulation of the motor centers, if sufficient, arouses all the cells in such centers to activity. As a result of this activity secretory and motor impulses are generated and transmitted to all the structures deriving their nerve-supply from such centers. *On the other hand, indirect, or reflex, stimulation of such centers, unless very extensive, arouses only a part of the cells composing these centers to activity. The motor, or secretory, response to such stimulation is local and not general.* That this statement may be more clearly understood, I will advance this proposition:

The Law of Motor Impulses

The same law governs the generation and transmission of reflex motor impulses that governs the circulation of the blood. "Where there is an irritation, the blood will flow."

Corresponding exactly to this, when the afferent filaments of the motor nerves distributed to any particular structure are irritated, that impression is transmitted to the centers. In response to this, motor impulses are generated and transmitted to the structure from which such sensory impression came, but never to any other structure.

The action is essentially local. In other words, "the effect of a given sensory stimulus is manifested only on a limited and practically constant number of motor nerves." *If the sensory impression is made upon the nerves of a limited area the motor impulse generated in response thereto will be reflected to a correspondingly limited area.*

Much attention has been given to agents which stimulate secretion, and the individual peculiarities of these agents have been carefully studied, but very little attention seems to have been given to the means of exciting the other function concerned in intestinal activity.

It is well known that deficient peristalsis retards bowel movements, and that if peristalsis is entirely suspended no movements occur; however but little practical application is made of that knowledge. Our entire therapeutic endeavor seems to be directed to the *stimulation of the secretory function*, while little, if any, attention, is given to *the other essential function*, the motor activity of the intestinal tube. The almost universal rule is to administer secretory stimulants (chemical irritants) and to trust to them, or to some vaguely defined or altogether unknown agency to arouse the activity of the other essential function.

It is true that remedies which excite intestinal secretion do also stimulate motor activity of the intestinal tube, but the manner in which they do this is so inefficient and so poorly corresponds to the time at which such function should be active that it seems quite unreasonable to depend upon such an agency for the production of so important a factor.

The four modes by which the secretory and motor activity of the intestinal canal and of the glands emptying their products into it may be artificially induced are: chemical stimulation, mechanical stimulation, electrical stimulation and physiological stimulation.

Chemical Stimulation of Intestinal Activity

Chemical stimulation is the method almost universally employed, hence we shall first consider the action of this class of agents, and the difficulties encountered in their employment, as well as the valid objections which exist to *their being depended upon* to stimulate the motor function of the bowel.

Take for example the cholagog cathartics. These cause a free flow of the biliary secretion. This secretion is poured into the duodenum and there it comes in contact with the terminal filaments of the nerves distributed to the intestinal mucosa to which it is a chemical irritant, but it can only stimulate these nerves as it is brought in contact with them. When motor activity of the tube is suspended many difficulties lie in the way of its being distributed throughout the length of the tube. Instead of the

small intestine being a straight patulous tube through which its contents can readily pass, it lies in numerous convolutions and at many points a short bend in the tube completely closes its lumen.

Now, if peristalsis is suspended, this effectively blocks the downward passage of the intestinal contents, thus confining whatever hepatic secretion which may have been induced by the action of cholagog to the duodenum and such segments of the jejunum as it may have been able to reach. If this secretion is abundant the obstruction to its downward passage causes overdistention of that part of the tube which it first reaches and in which it is confined. All the sensitive nerves supplying this part send up repeated sensory impressions, and the reflex respond to these at times amounts to spasmodic contractions.

These violent muscular contractions mechanically irritate the sensory nerves passing through or terminating in their fibers. This mechanical stimulation augments the already powerful chemic stimulation in the part. These, acting together, cause violent contractions of the tube, and these contractions force the contents both upward and downward.

If the segment which is thus irritated be near the stomach, bile and other intestinal contents are forced up into the stomach. If lower down, these contractions straighten the bend in the tube immediately below this segment, thus allowing the contents to pass downward to another segment of the tube. The liquid is here again arrested and held until the irritation caused by its presence reflexly stimulates this segment of the tube to such degree of motor activity as to straighten the bend in the intestine at its distal end and thus permit the further downward passage of the intestinal contents.

This phenomenon is repeated, segment by segment, until the chemically irritating intestinal contents have gradually but with difficulty worked their way through the entire length of the tube, and then, but not until then, does evacuation of intestinal contents begin.

It is evident that *since local irritation begets only local motor activity*, in order to arouse peristalsis extending throughout the entire length of the tube, the chemical irritant, upon which we are depending to stimulate such function, *must be distributed throughout the entire length of the tube.* When the motor centers are profoundly lethargic, resulting in entire suspension of peristalsis, *this is a physical impossibility* except by the tedious and difficult process above described.

Mechanical Stimulation of the Bowel

Massage of the bowels is another indirect means of stimulating the motor activity of the intestinal tube, but since in practising massage the hands of the operator are free to move at will, a large portion of the surface of the tube may be stimulated simultaneously, thus sending sensory impressions from almost the entire length of the tube. These impressions are responded to by motor impulses transmitted to a correspondingly extensive area of surface. While this is a reflex phenomenon, these responses are transmitted in such numbers and to such an extent of surface that they throw the entire tube into a fair degree of motor activity, resembling, to a considerable extent, peristaltic waves generated by the governing nerve-centers when acting normally.

In describing reflexes, the older physiologist had in mind only reflex movements; but at the present time, physiologists are agreed that the reflex act effects not only the muscles, voluntary, involuntary, and cardia, but also glands. We theretore have to deal with reflex secretion as well as reflex motion.

It should be borne in mind that by massages of an organ supplied with secretory nerves the impression made on their afferent branches are converted into secretory impulses, and these are transmitted to the organ from which the irritation came along with such motor impulses as may be excited by the massage. Secretion and motion thus excited is distributed throughout the entire length of the intestinal canal, no part

of the tube being overstimulated, while other parts are unreached.

Massage, either by the hand of a masseur or by an electric vibrator, is a therapeutic measure which can hardly be overestimated. It can be used with the most happy results in connection with other measures.

Another form of massage, much less positive but none the less valuable as a health-measure, is *deep breathing*—forced abdominal respiration. One who would preserve his health and keep himself in the best working trim will find this an invaluable aid if faithfully practised.

The best results are obtained by devoting fifteen to twenty minutes to the practice of this exercise immediately after retiring at night. It should be carried out as follows:

Lie either flat on the back with limbs straight or on one side with the knees drawn up; then, by voluntary efforts, fill the lungs to their utmost capacity until the abdominal muscles are forcibly distended. Hold this position about ten seconds, then expel the air from the lungs, at the same time *forcibly contracting the abdominal muscles*. Repeat this at each inspiration until fifteen to twenty minutes have been devoted to the exercise.

This alternate forcible distention and contraction of the abdominal walls changes the relation of all parts of the intestinal canal to each other, thus distributing and mixing the bowel contents. This mixing of the intestinal contents promotes the normal chemical changes, while these new compounds (nature's stimulant) induce, reflexly, both secretion and motion, the result being a much more complete evacuation of the waste products.

The mental concentration incident to the successful carrying out of this exercise exerts a most favorable influence upon the function we are seeking to promote. Forced abdominal respiration is a voluntary act, and in order to carry it out successfully, the attention must be concentrated upon it to the exclusion of all other things.

Mental states greatly influence vital functions. Anxiety, fear, grief, excessive mental activity, and so on, impair digestion, secretion and excretion. Conversely, concentration of the mental faculties in an effort to promote bowel movement, even for only fifteen minutes, *involves the cessation of damaging mental states*. The surcease thus afforded, the relaxation and response accompanying it, give a lethargic function a chance to become active.

In many instances the mental concentration incident to the practice of massage by forced abdominal respiration proves to be hypnotic to such a degree that before the fifteen-minute exercise has been completed the subject is asleep, the subconscious mind simply having taken control while the conscious mind was intently concentrated upon the promotion of a vital function. In the morning a more satisfactory bowel movement is sure to occur. Is not such a result worth while?

Electric Stimulation

The motor centers can be stimulated to functional activity by electricity. While this is theoretically true, I do not believe that electric stimulation can be used to much advantage.

Direct Physiological Stimulation

In health, when the nerve-centers are acting normally, motor impulses *are generated and rythmically transmitted* to the abdomen-viscera.

This is manifested in the intestinal tube by waves of peristalsis setting in at the pylorus and extending throughout the entire length of the small intestine. These waves amount to a worm-like motion by which every part of the structure of the tube is changed in its relation to other parts. The uniformity and strength of these motor waves depend upon the state of activity of the nerve-centers. If these centers become lethargic, these waves are less distinct; if they are profoundly blunted, they cease altogether. In disease, they frequently are in this inactive state.

We have considered three of the methods by which this inactivity may be overcome, but *the fourth, which is by far the most*

valuable and efficient, is now to be considered.

The functional activity of the intestinal tube depends upon the condition of the nerve-centers. If these centers are inactive, the motor activity of the intestinal canal and the secretory activity of the glands emptying their products into it are correspondingly impaired or suspended.

In attempting to remedy such a disordered condition, our first effort should be, as far as possible, *to restore these centers to a state of responsiveness.*

If these centers have become exhausted from overexcitation, then sedatives, motor depressants, should be given; if the suspension of their activity is due to the sedative effect of some morbid poison, then remedies which will directly stimulate the motor centers should be given.

We Must Stimulate Both Motor and Secretory Functions

It must constantly be borne in mind that *to secure evacuation from the bowel it is equally as necessary to stimulate activity of the motor function of the tube as of the secretory function of the glands.*

The bile is probably the normal stimulant of the intestinal movements, and substances used as cathartics doubtless act in the same way. These substances irriate the terminal filament of the motor nerves distributed to the intestinal mucosa. This irritation is transmitted to the centers, and there motor impulses are generated and reflected to the point from which the irritation came, and in this way that part of the intestinal tube is set in motion.

If complete paralysis exists, of course no amount of irritation will excite motion. Where paralysis is only partial, or where the centers are benumbed by disease or have their sensibilities reduced by powerful sedatives, a higher degree of irritation is necessary to induce peristalsis. Agents which excite peristalsis by irritation of terminal nerve-filaments are frequently incapable of exciting such action *unless these centers are brought into a state of responsiveness by direct stimulation.*

The intestinal fluid may be an irritant to all parts of the mucous membrane which it reaches, but as the tube lies in numerous folds and if motor activity is impaired, its passage downward is much delayed. Until it has been distributed downward to a considerable extent a sufficient area of the surface is not being irritated to cause peristalsis throughout the entire length of the tube.

In my experience, there are few conditions which make it best to do indirectly what can be done directly. It seems unreasonable to depend upon so inefficient and uncontrollable an agency as reflex irritation to induce peristalsis when it can be excited to any degree desired and at the time it is needed by stimulation of the motor centers by the aid of strychnine.

The Mechanism of Peristalsis

Physiologists teach us that waves of peristalsis set in at the pylorus and extend down the entire length of the tube. This is doubtless true in health, since *these waves originate because of the normal activity of the motor centers* and are transmitted throughout the entire length of the tube, but when the biochemism of the motor cells is interfered with by toxins these normal waves cease or are much less pronounced.

In this condition, if it is sought to excite peristalsis by introducing irritating substances into the intestinal canal, that part of the canal to which the irritant is applied will be first thrown into action. The contraction of the tube thus induced urges the irritant downward with greater or less speed, but as these substances make their impression upon each section of the tube only as they reach it, and as the motor impulses called out by this irritant are reflected only to that part of the tube from which the irritation came, *the tube is not* thrown into motion as a whole or at once, but section by section, and only as each section receives motor impulses transmitted to it in response to impressions made by the irritant upon the nerves of that particular section.

Strychnine is an excitomotor stimulant and has an elective action for the involuntary

or unstriped muscular fiber, and as the muscular coat of the intestine is composed of this class of fibers, the entire length of the intestinal tube can be thrown into motion by direct stimulation of the motor centers by this drug without materially affecting the voluntary muscles.

Peristalsis induced in this way corresponds exactly to that of health, that is, it occurs because of the artificially induced activity *of all the cells in the centers* controlling this function, and motor impulses generated in response to this artificial stimulus are transmitted in a uniform degree *to all the structures that would receive them if the centers were acting normally.*

The quantity of strychnine required and the frequency of administration depend mainly upon the degree of lethargy or insensibility of the nerve-centers; but when strychnine is administered in sufficient quantities and at proper intervals, active peristalsis can be excited and kept up as long as desired, provided the nerve-centers are in condition to respond to any kind of stimulation. If strychnine be administered with mercurial or other secretion-producing agent, *each does its part of the necessary work* in bringing about the conditions essential for normal evacuation of the bowel.

The intestinal canal throughout its entire length is thrown into normal or hypernormal motion by stimulation of the motor centers by strychnine. By increasing the irritability of the motion centers, this agent brings these centers into such a state of sensitiveness that they readily respond to any peripheral irritation brought to them. In this way reflex stimulation is made more effectively to augment direct stimulation.

As soon as the secretion-producing agent begins to pour its product into the intestinal canal, this secretion and other intestinal contents are gently, gradually, but certainly carried downward, thus bringing the chemical irritant into contact with more extended surface of the intestinal mucosa. There is no overdistention of the bowel at any point, no antiperistalsis, vomiting, colic, or other distress. In other words, *the conditions essential to normal evacuation of the bowel* have been in reality artificially induced, but *no more distress or other discomfort accompanies the act* than if no artificial means had been used in its induction.

Remedies of the Belladonna Group

In this connection I wish to call attention to the action of the remedies of the belladonna group, which in this particular are synergistic to strychnine.

Strychnine, be it remembered, increases the motor activity of the intestinal canal by its action as an excitomotor stimulant. Belladonna, on the other hand, increases the motor activity of the canal by lessening inhibition. Given together, these two drugs act synergistically, and a more satisfactory degree of peristalsis can be excited by the two remedies combined than by either alone *and for this purpose they are ideal agents.*

I suggest the following schematic diagram as showing the principles upon which a physiological purgative compound may be made. A *combination* of a suitable quantity of one or more of the agents of each of the four classes here named *will stimulate every function concerned in normal evacuation of the bowel and bring about that result with the least disturbance to the system and with the least possible tax upon its resources.*

SECRETORY STIMULANT May be any one of these alone, or two or more combined.	Calomel Podophyllin Cascara Rhubarb Senna Leptandrin Aloin Bryonia Jalap (or similar remedy)	Castor Oil? Saline Laxatives?
MOTOR EXCITANT	Strychnine	
ANTISPASMODIC	Ipecac	Also secretory stimulant.
INHIBITORY DEPRESSOR	Atropine Hyoscine Hyoscyamine Scopolamine Stramonine	Also antispasmodic and secondarily secretory stimulant.

Do Not Take Purgatives on a Full Stomach

A purgative should never be given on a full stomach. If the demand for its effect is so urgent that there is not time to wait until the stomach empties itself, then an emetic should be given. Beginning with an empty stomach removes one of the causes of the frequent nausea, vomiting, colic,

etc., and does much to overcome the objections to the use of purgatives.

The remedy administered acts as a purgative because its chemical or physical properties are such as to render it unfit for use as an article of nourishment. These chemical or physical properties render it unacceptable or repulsive to the system—an irritant. Because of these irritating or unwholesome properties, the "sentinels on guard" set up an active effort to eliminate it or its products.

The commixture of such an agent with the stomach-contents renders the entire mass unacceptable for assimilation, and therefore must be thrown off either by vomiting or passed through the intestinal canal as waste. It is either ejected from the stomach in bulk or passes on precipitately to the small intestine, where it greatly incumbers the organ and causes unnecessary suffering. Again, such a bulk of matter in the stomach interferes materially with the prompt and complete absorption of the remedies given, this delaying or rendering uncertain their action.

The first meal after the purgative should also be a very light one. After the action of a purgative, even after all discharges from it have ceased, the digestive tract is more or less enervated and disturbed, therefore it is not in condition to undertake the digestion of a full meal. If a full meal be taken at such a time, it will greatly lessen the good effects which would otherwise have come from the action of the purgative.

In conclusion, I wish to say that it is a serious error to administer an active secretory stimulant without at the same time making efficient provision for stimulation of the motor function of the intestinal canal. Except in a few rare conditions, *the motor activity is always as greatly impaired as the secretory function.* Since each of these is essential to satisfactory bowel movements, the efficient stimulation of each of these functions should be provided for in every purgative compound.

Sleep and Death

By GEO. F. BUTLER, M. D.

. . . And daily from the shore of sense
I sail into the sea immense
Of quiet sleep.
The passage is so vast, so deep,
And yet no fear keeps me away;
I hope to rise the coming day.

There is a passage more severe
When pilgrimage ends in a bier—
The sun that sets
Seems ne'er to shine again. 'Tis death
And yet my fear to die, is vain,
I know, I rise to life again.

Typhoid Fever and Its Complications

An experience of more than a quarter of a century in the treatment of this disease is here recorded, with some practical deductions concerning practical methods of handling it and its complications

By WILLIAM F. WAUGH, A. M., M. D., Chicago, Illinois

THE clinician who fails to avail himself of the advantages offered him by the laboratory makes a huge mistake; the laboratory man who fails to take into consideration the observations made clinically makes a hugher one. It is said that a wealthy man in revolutionary days began to build a stately mansion in Philadelphia by constructing seven stories of cellars; by the time he came up to the surface of the earth his funds were exhausted, and a comparatively mean building covered the elaborate underground structure. It was long known as "Morris's Folly." Our strictly scientific friends who spend all their energies in the study of pathology and diagnosis, and are helpless when they reach the sickroom, might take a lesson from this tale.

Our work as true physicians begins with our patient, who looks to us for relief from suffering and delivery from peril. His restoration to health is our only excuse for demanding pay—his only reason for employing us. This being our belief, we have all our professional life been mainly interested in the study of the best means of accomplishing this end. Hence our views necessarily have been tinctured by our clinical observations, and newly broached ideas have been judged mainly as to their practical utility.

Intestinal Antiseptics in Typhoid Fever

Take for instance this question of the use of intestinal antiseptics in typhoid fever. We used the sulphocarbolates and found our results improved. We instituted a preliminary cleaning out of the bowel, and obtained still better results. Combining these procedures with our previous knowledge as to hygienic regimen and the treatment of symptoms, we found that typhoid fevers were reduced to the category of mild, simple, or abortive forms, and serious complications did not occur; while year after year rolled by without seeing a solitary patient of ours dropped into a typhoid grave.

Men knew the sun shone when as yet they hadn't the ghost of an idea why. The knowledge of a fact may exist without the knowledge of its true explanation. Hence, when they told us the antiseptics were useless because it was impossible to thoroughly disinfect the long bowel, we saw here a logical fault, a *non sequitur*—it was not essential that every bug should die to do good. Then we were snubbed well by being informed that disinfectants were useless, because even in the incubative period the typhoid bacilli were present in the blood, far beyond the reach of intestinal antiseptics. Still we were undisturbed in our conviction because the fact of the benefit secured by this treatment remained. Then the opposition sought to belittle the remedies, asserting that they were "only members of a class," "there were others just as good," "calomel had long been known as a gastrointestinal antiseptic," etc., etc. We acknowledged all this—we had used calomel with benefit, but we had obtained no such advantages from it, or from any other antiseptics, as we did from the sulphocarbolates.

Today we stand exactly where we did at first, but the profession has come a long way toward our position. The sulphocarbolates are now utilized as intestinal antiseptics far more extensively than any other agent, and their value is daily becoming more and more evident. Our views on the treatment of typhoid fever do not rest on our own experience alone but on that of many thousands of our colleagues.

Begin by clearing the bowels completely. Give a centigram of calomel every hour for six doses, then a small dose of saline laxative—a heaping teaspoonful, repeating this every two hours until the bowel is empty. Aid by flushing the colon with half-gallon enemas containing a dram of sodium sulphocarbolate, the fluid as warm as feels comfortable (between 100° and 112° F.), repeating once of twice a day until all is clear.

Meanwhile don't wait, but begin as soon as typhoid is suspected, giving 2 to 5 grains of zinc sulphocarbolate, or one or two intestinal antiseptic tablets, every two hours, until the stools are quite devoid of abnormal odor. Then lessen the doses, giving just enough to keep the stools right. Give nuclein solution, 1-2 dram daily, absorbed from the mouth, to reinforce the leukocytes in their war against the invaders that have already gotten into the blood. And this constitutes the routine treatment of typhoid fever, applicable to every case of the disease.

Now we will go back to what in any well-regulated medical article should come first—the pathology.

You know very well, Doctor, that the digestive fluids are antiseptic to the bowel, that these are lessened or stopped in any fever; that absorption from the bowel into the blood is enormously increased then by reason of the rapid loss of fluid by febrile radiation; that Peyer's patches are disabled and their vitality lowered by local disease, so that they tend to fall into sphacelus, and the ulceration tends to erode vessels, causing perilous hemorrhage, or to open the peritoneum, causing death; that typhoid stools stink like—well, we won't drift into theologic matters—and that you would never dream of using such stools for dressings to ulcers on the surface of the body. You also know that the microorganisms in the bowel during a typhoid are numerous and venomous, and that their toxins being absorbed thence into the blood circulate through it to every cell in the frame, and influence it disastrously; to which we naturally attribute the multitudinous nervous and other functional derangements characterizing this fever.

Absorption of Toxins from the Bowel

Now, knowing these things, does it not seem the most evident conclusion that we should clear this morbid matter from the bowel and render the alimentary tract clean and sweet? Stop the absorption of toxins from here and have the lesions bathed in a mildly antiseptic fluid, stimulating to healthy action by adding oil of turpentine if ulceration has commenced. If after putting this theory to the test for a quarter century of not altogether a small practice, and finding the results more than hoped for, finding that always the accomplishment of the desired antisepsis is followed by a reduction in the symptom-complex of about forty percent, wouldn't you have rather a strong conviction that your theory is right? If thousands of other clinicians verify your results by obtaining as good or better, I rather think that the fact that Osler has not yet announced his approval of the treatment will not disturb you much.

Fecal toxemia is likely to be acknowledged as an axiomatic fact—and forgotten in the study of pathology and of symptoms. Take it as a primary, fundamental fact, base on it your treatment, and note the changes effected by its elimination as a factor of the case. Symptoms subside, complications fail to appear, difficulties vanish, obscurities clear up, and patients get well so quickly that your diagnoses are questioned. Furnish pure blood to a suffering organ, and its recuperative forces will win out in the conflict with disease.

Why should there be a typhoid-fever carrier? The antiseptics lessen the danger from the stools, and if these are properly disinfected the danger is gone. Typhoid fever exists because physicians fail in their duty. Nuttall showed years ago that fresh whitewash is quite effective against this germ, and all that is needed is that the stools be passed into a vessel containing this material and *allowed to stand at least one hour before being emptied*, so that sufficient time may be allowed for the lime to permeate the

fecal masses and destroy the bacilli. Germicides are not instantaneous in their action. If this simple precaution were observed with every typhoid case the malady ultimately would cease to exist in sanitary areas.

I have nothing new to say about typhoid fever. I have been saying all this for now twenty-five years. The only thing new about it is that twenty-five years' experience has confirmed my original claims. We all like to hear new things and obtain new knowledge—but there's something better than the new, more important than experiment, and that is the truth, the confirmation of what once was new and experimental.

What we want mainly is *the very best.*

The Nervous Phenomena

Most of the nervous phenomena of typhoid fever—the nervous unrest, delirium, headache, somnolence, subsultus, carphologia, aching of parts on which the weight rests, disturbing dreams, coma vigil, etc.—are due to the presence of toxins in the blood; and these in large part are derived from the intestines. It has yet to be proved that the typhoid bacilli in the blood and tissues contribute anything to this toxemia although it is very likely they do.

The proof of our statement lies in the radical change that ensues after the alimentary canal has been completely emptied and disinfected. So much of the nervous symptom-complex is then found to have disappeared that the situation is completely altered. We then obtain from minute doses of zinc valerianate, or some other of the milder antispasmodics, a degree of relief that would scarcely be anticipated from this rather inoffensive group of remedies. Give of the zinc salt one centigram every half hour as needed.

Very rarely indeed—we recollect just one case—we may have in the first few days a wild, fighting delirium, for which I once gave antimony. Nowadays I should rely on full doses of gelseminine, given fearlessly to full effect; or on veratrine if the symptoms indicated it. Probably larger doses of gelseminine would replace veratrine, but we do not as yet know if the former is as thorough an eliminant as our old standby.

The ataxic group of symptoms is threatening and of very ominous prognosis; yet they subside rapidly under the milder antispasmodics. If the pupils are dilated give physostigmine enough to contract them to normal.

Besides zinc valerianate we have as mild antispasmodics camphor monobromide; for cases demanding extra stimulation, scutellarin, cypripedin, and caffeine valerianate; while stronger agents are found in cicutine hydrobromide, gelseminine, solanine and possibly narceine.

But never neglect the fundamental remedy—clean out, clean up and keep clean.

Treatment of Intestinal Hemorrhage

Intestinal hemorrhage in typhoid fever is best treated by prevention. If the bowels are well emptied, kept clear and disinfected throughout, there is very little danger of hemorrhage. How could anybody expect the intestinal tissues, weakened by disease, bathed in poisonous fecal matter of malignant intensity, *not* to fall into sphacelus! When the erosion has opened the lumen of a large artery we have the one form of hemorrhage for which atropine is not effective. It is true, ergot and digitalin act on the splanchnic vessels more powerfully than on any other part of the circulation, and we have here to rely upon these hemostatics; for we can not well employ the relaxants of vascular tension in typhoid fever with perilous hemorrhage. Give full doses of ergot and digitoxin, apply ice to the abdomen, and carefully support the pulse and respiration, holding glonoin ready for syncope. Atropine may be employed as a succedaneum and for minor intestinal hemorrhages. But if a vessel is opened that is too big to be staunched by atropine, open up the abdomen and ligate. The danger is too imminent for delay, or trusting to remedies of uncertain powers, and, in the case of digitoxin, too slow in getting to work.

The relation of constipation to typhoid is generally misunderstood. Because cases in which the bowels are constipated are

often mild, people jump at the conclusion that it is better not to act on the bowels. The fact is that constipation indicates a mild form of the disease with little involvement of the intestinal tract. But little argument should be necessary to show that fecal matter is not a good dressing for intestinal ulcers; and especially during the course of a typhoid fever, when the feces are pathogenic to an unusual degree and the affected tissues display a special tendency to death.

The question is readily decided by clinical trial. The vast improvement when the large bowel is completely emptied proves the correctness of the proposition. This does not mean the reckless administration of irritating cathartics, but the gentlest methods available. Long ago Wunderlich found that a preliminary dose of calomel favorably influences the course of a typhoid, effecting a material reduction of the mortality percentage. Nowadays we employ smaller quantities, giving a grain in broken doses; followed by the moderate use of salines, aiming to give just enough to liquefy the stools but not to induce painful peristalsis. This should be accompanied by colonic flushes, filling the large bowel with warm saline or soda solution, with 1-2 to 1 grain of zinc sulphocarbolate to the ounce. An ounce of sodium bicarbonate to two quarts of water, as warm as can be injected without discomfort, answers admirably. This should be repeated daily as long as there is reason to believe the bowel is not completely emptying itself.

In one notable instance, when despite the above treatment the symptoms showed fecal retention and persisting toxemia, the physician administered an enema of a quart of coal oil, with the best effect. The enema brought away a large quantity of indescribably fetid matter, with immediate improvement and rapid convalescence.

When one learns to recognize clinically the effects of fecal absorption it is astonishing to see how frequent and how important an element it is in the symptomatology of a host of maladies. I firmly believe that Metchnikoff hit upon a great truth when he attributed old age to toxins in the large bowel.

The Question and the Answer

The reasons why one man has taken up active-principle therapy and continues to use the alkaloids in preference to the galenicals—and why he writes so much on the subject

By GEORGE L. SERVOSS, M. D., Fairview, Nevada

ON various occasions I have been asked why I use the active principles or alkaloids in my practice and why I write so much on the subject. I have been asked the question direct, "Do you get results?" I have also been asked "Can you depend upon the alkaloids?" Another question has been propounded: "Is it safe to take up the application of active principles without first devoting considerable study to the subject?" I have also been asked whether "I consider alkaloids or active principles as stable and reliable as galenicals, and if so, why?" Last but not least I am asked the question, "Are you not afraid to employ such potent remedies?"

These questions have all been asked by practicians, many of them by serious students, men abreast with scientific progress in medicine, in other than therapeutic lines. It has always been my endeavor to reply to such questions as they have arisen, either by word of mouth or through the medium of the mails.

This mode of answer has become, in a measure, burdensome, although it is always a pleasure to me to discuss any specific question, and so in order to answer these general

questions I am taking advantage of the space offered by the editors.

Reasons Why I Use the Active Principles

I use active principles, first, because they are simple remedies, in their simplest forms, and are not modified by the presence of foreign matter as is frequently the case with galenicals; second, the active principles are of invariable standard and not subject to deterioration or decomposition to climatic causes, their strength remaining unchanged at all times, which is not true of fluid preparations, which evaporate and are liable to decompose from exposure to light or air; third, after several years' experience in the use of active principles, I have found that results are obtained and sustained with greater ease when I have employed the active principles than when galenical preparations of the same crude drugs were exhibited; fourth, I have found the graduation of the active-principle dose much more easily obtainable than that of the galenicals, and that it has been an easy matter to dose "to effect" and thereafter sustain that effect with the alkaloids, which one cannot with galenicals.

In addition, I have found drugs of greater availability since applying active principles than was ever the case during the several years during which I employed galenicals.

Why do I write so much on the subject? Simply because my experience has taught me that I have found something of a therapeutic nature which is dependable, and having, from practical observation, established this belief in my mind, it is a pleasure to make public my findings, so that other practicians may eventually be brought out of the paths of therapeutic nihilism, and in a weak way I desire to show them that at least one man is getting results and getting them quickly.

I Can Depend Upon the Alkaloids

Do I get results? Most assuredly, or I should never again use an active principle. Can I depend upon the alkaloids? They have never failed me as yet. This looks like a foolish question to me when the user of galenicals depends wholly and solely upon the alkaloidal or active-principle strength of such preparations for his effects and results.

It is safe to take up active-principle therapy without much special study of the subject. It is not necessary to take up the entire line at once, in fact a very successful practice may be maintained with less than twenty-five of these principles. While they are potent (otherwise they would be useless), when given in minimum dosage no fear of overdosing need be felt, if their actions are watched and the effect gained gradually. There are no trip-hammer blows struck with the small doses to effect of active principles as is the case when physiological doses of galenicals are given. Small repeated doses allows natural compensation to be established and lessens the liability to the occurrence of any untoward action of the drug.

In conclusion, allow me to say, that I employ alkaloids or active principles simply because they are invariably dependable, always of the same standard of strength (no guesswork as to dosage), and *give results*.

I write about them for the same reasons. Go then and do likewise.

Digitalis and the Digitalis Group*

Practical pharmacodynamic notes concerning digitalis, its active principles and similar remedies: with a consideration of its proper therapeutic applications

By ROBERT TISSOT, M. D., Chaux des Fonds, Switzerland
Collaborator on "Folia Haematologica", Leipzig and Berlin; and on the "Journal de Dosimetrie et d'Alkaloidotherapie", Paris

VI. Posology (Continued)

PERIODIC DIGITALIZATION.—This consists in the administration of digitalis every fifteenth day for several months and even some years in conditions where the pulse is good and edema absent. This method is applied in serious cardiac disorders which have given rise to some pulmonary, hepatic or renal stasis or peripheral edema, when these cardiac disorders are little influenced by the antiasystolic doses. This method conduces to the reduction of hepatic stasis and arrest of visceral lesions—lesions which, when they are once established, do not respond to digitalis medication. The dose to be employed one day in fifteen is .8 to 1 milligram (1-85 to 1-65 grain) of digitoxin.

Continuous Digitalization.—Minute doses of digitoxin taken daily (1-500 of a grain per day for eight years) have prolonged the life of an arteriosclerotic patient. This continuous digitalization requires frequent surveillance of the subject. It is useful in sclerosis of the coronary arteries and in alcoholic, tobacco and gouty cardiopathies. In these cases Eichhorst gives of his digitalis powders—consisting of digitalis leaves, 10 centigrams (1 1-2 grains) and diuretin, 1 Gram (15 1-2 grains) per dose—one or two doses per day for several weeks.

Medicinal Tolerance.—This varies with the individual. Some patients may take up to as high as 8 Grams (120 grains) of the leaves in fifteen days, without being improved or made worse, while in others a few decigrams of the leaf will provoke alarming vomiting, requiring the suspension of the drug.

Age and Doses.—The *single* dose of digitalis leaves at a given age is, respectively, as below:

At	2	years	the	dose	is	8	milligrams	(1-8	grain)
"	4	"	"	"	"	2	centigrams	(1-3	")
"	7	"	"	"	"	4	"	(2-3	")
"	10	"	"	"	"	10	"	(1 1-2	")
"	17	"	"	"	"	15	"	(2 1-4	")

These doses may be repeated five times a day.

Choice of Preparation

The leaves in very fine powder—1-10 Gram (1 1-2 grains) given in a cachet—act well. The extraction of the active principles is left to the organism, which liberates them much better than can the pharmacist with his macerations or infusions. The patient should drink much water after each dose so as to guard him against the possibility of gastric disturbance.

In case of failure, after having given without result 2 to 4 Grams (30 to 60 grains) of the drug, it is better to suspend medication and try something else, such as milk diet, caffeine, strophanthus. At the end of fifteen days one can return to the digitalis. Sometimes the second, third or maybe fourth trial is crowned with success. It may be that failure is due to relaxation of the cardiac fiber. The digitalis has no action upon such fiber, but when under the influence of rest or caffeine it has regained its normal tension digitalis evercises its proper action.

Digitoxin generally has about the same action as the leaf; sometimes this action is less, sometimes greater. Being a definite principle, digitoxin has the great advantage that it can be administered in exact dosage.

* The first portion of this exhaustive study of digitalis, digitalin and the associated active principles appeared in the May number of CLINICAL MEDICINE of the current year. It should be read in connection with this article.

True digitalin [digitalinum verum of Kiliani. See this journal, May, p. 532.—ED.] gives results equal to or often superior to the digitalis leaf, but it may be destroyed in part, by the gastric juice, its results varying with the quantity destroyed, this quantity varying itself with the quality of the gastric juice.

The soluble digitoxin of Cloetta has the great advantage of being capable of injection into the muscles and veins. Often these injections give characteristic digitalis effects in a very few minutes. This great rapidity of action makes it possible to save lives, which otherwise would be hopelessly destroyed. If digitalis is a great remedy, the digitoxin of Cloetta is even more valuable because it acts almost instantaneously.

The sterilized solution of soluble digitoxin is marketed under the name of *digalen*. A cubic centimeter (17 minims) of this product is equal to 15 centigrams (2 1-4 grains) of digitalis leaves and contains 0.3 milligrams (1-200 grain) of the active product. The proper dose to inject into the veins in pneumonia patients in collapse is about 2 Cc. (33 minims). Winkelmann injects 3 to 4 Grams (45 to 60 grains) in rapidly succeeding doses. His results have been extremely rapid and lasting. This dose of 3 to 4 Grams (45 to 60 grains) is quite safe.

Intramuscular injections are less active than when given intravenously. The doses are 2 to 3 Cc. (33 to 50 minims) in the morning and the same amount in the evening. By the mouth the normal dose is 1 Cc. (17 minims). The maximum dose-limit is 5 Cc. (70 minims) a day. These quantities may be given per rectum also.

The discoverer does not divulge the nature of his digitoxin, which consists, possibly, of a mixture of digitoxin and digitalin.

Digipuratum Knoll.—This is an extract of digitalis leaves from which the inert and irritating constituents have been removed, as is the case with digitonin, for example. This extract is tested by physiologic experiment on the hearts of batrachians; its action consequently is always uniform. One decigram (1 1-2 grains) of digipuratum acts the same as 1 decigram (1 1-2 grains) of active digitalis leaves. Its action is rapid and it produces no gastrointestinal disturbances.

A pastil of one decigram (1 1-2 grains) constitutes a single dose. As an asystolic dose it is best to give four pastils the first day, three the second day, three again the third day, and two the fourth day, each dose half an hour after eating. Subsequent doses should be adjusted according to values, to-wit: 1 decigram (1 1-2 grains) of digipuratum is equivalent to 1 decigram (1 1-2 grains) of the very active leaves. According to my experience, which is extensive, the digipuratum of Knoll is the digitalis *par excellence* when time is not pressing too much and when one may choose the gastric route. This remedy contains practically all the active principles of digitalis. This is a great advantage, because, according to a well-known biologic law, *several agents acting in the same way are better and are less toxic than a single agent whose activity would be equal to the combined activities of the remedies constituting the mixture.*

Digitalone is an extract of fresh leaves of digitalis of which it contains the active principles. Its action is that of digalen. Like this, it contains digitoxin in soluble form and harmless in therapeutic doses. (This innocuousness has not yet been explained, but it is a fact.) Its doses are small and consequently exclude the danger of cumulation and poisoning. Intravenously administered digitalone is not irritant nor has it any general objectionable action. One single injection brings on the digitalis action in a short time, sometimes being manifested at the end of only a few minutes, and lasting from twenty-four to thirty hours. To obtain a pronounced anti-asystolic action it is necessary to repeat the injection every twenty-four hours until the effect is plain. For an adult the single dose is 2 Cc. (33 minims). The preparation is standardized to 10 percent. It does not act as powerfully as strophanthin, as we shall see later.

VII. *Preparing the Patient for Digitalization*

Rest in bed, with a milk diet, permits the cardiac muscle to recuperate; also, it sometimes assures success even when the remedy

alone fails at the first attempt. For edematous and dyspneic cardiac patients Huchard prescribes scammony, 0.4 Gram (6 grains), and calomel, 0.3 Gram (4 1-2 grains), in two powders, to be taken at half-hour intervals. This purgative should not be prescribed if the patient has diarrhea. When the edema of the limbs is very great it is necessary to make punctures with a needle which has first been made red-hot in a flame. These punctures should have a depth of three to four mm. and they should be about 4 to 5 cm. distant fom each other.

Caffeine opens up the coronary vessels and facilitates the access of digitalin to the cardiac fiber. Theobromine acts in the same way. It is not astonishing, therefore, to see clinicians associating systematically digitalin and caffeine or diuretin, as for instance in the powders of Eichhorst, namely: finely powdered leaves of digitalis, 0.10 Gram (1 1-2 grains), diuretin, 1.0 Gram (15 1-2 grains); powdered sugar, q. s.; three such doses to be taken daily. Riegl long has prescribed, in association, finely powdered leaves of digitalis, standardized, 0.10 Grams (1 1-2 grains), sodiobenzoate of caffeine, 0.20 Grams (3 grains); one such powder to be taken three or four times a day.

In cases in which cyanosis is very great and dyspnea threatening, the digitalis should be associated with stimulants, e. g., 10 percent camphorated oil, 1 Cc. (17 minims) in hypodermic injection five to eight times a day. Simultaneously one may give champagne. The digitalis will be better tolerated by the stomach if associated with quinine. Orexin has the same effect. When the heart is dilated digitalis shows very little influence. In these cases we should first give caffeine, 0.2 Gram (3 grains) two or three times a day, and strychnine, 0.1 milligram (gr. 1-64) two or three times a day. After the heart has resumed its normal condition, or a little before, it will be time to give digitalis in antiasystolic doses.

Strophanthus and Strophanthin

I. Historical and in General

Fraser, in 1885-1887, published the results obtained by the employment of tincture of strophanthus. Many physicians followed his example, but their opinions were not in accord, because the samples of strophanthus employed belonged in part to very active varieties, in part to varieties which were nearly inert. It is very difficult to distinguish botanically these various species. At the present time the only species official is strophanthus Kombé. (Strophanthus gratus would be satisfactory, but it cannot be obtained in sufficient quantity. The seeds of strophanthus hispidus often are adulterated with other valueless seeds.) These seeds of strophanthus Kombé and hispidus which contain a sufficient quantity of strophanthin are recognized by the dark-green color which the exposed endosperm assumes when treated with sulphuric acid. At the present time the drug is collected under the surveillance of trained botanists in order that only the seeds of strophanthus Kombé may be gathered.

The only one of the strophanthins that is chemically defined is the glucoside, but its pharmacodynamic action is not as yet sufficiently well known. The other strophanthins, so named, do not all exhibit the same activity, whether they be the amorphous or crystalline kind. *Their therapeutic doses are very close to their toxic doses when they are administered by the intravenous route. On the other hand, the action of strophanthin if given hypodermically is better than that of any digitalis preparation whatever, since in cases of extreme urgency one cannot abandon these.* We shall return to this subject later.

The seeds of strophanthus Kombé contain about 7 percent of the active principle, and one grain is equal to 5 to 10 drops of the tincture. These seeds contain an oil to the extent of about one-third of their weight. This oil usually is removed by petroleum-ether but may be left in the tincture without doing harm, as is permitted by the British Pharmacopeia. The German tincture is 10, the British of 20 percent strength. The tincture of strophanthus should be tested by experiment on the animal; one should measure the time necessary for a definite dose to arrest the action of the heart. Strophan-

thin is as bitter as digitoxin. It is soluble in water and alcohol—a very important fact.

II. Therapeutic Action

In normal man strophanthus, in therapeutic doses, has no appreciable action. In cardiac disturbances, with small, irregular, frequent pulse and so-called dyspnea, strophanthus stimulates the myocardium to more efficient action and thus improves the circulation. The slowing of the pulse may be considerable, but the deep, free respiration increases the amplitude of the pulse (the difference between systolic and diastolic pressure), the augmented diuresis, the disappearance of edema (when the kidneys are capable of proper function), all these signs show that strophanthus is active. This remedy probably produces spasm of the vascular musculature. Its action, as may be seen, is similar to that of digitalin. It is distinguished, however, in the following particulars:

Points of Distinction Between the Action of Strophanthus and Digitalis

Strophanthus is a calmative to the nervous system, posessing this action only very feebly. The tincture of strophanthus Kombe has this property to the highest degree. Its action does not appear to result solely from improvement of the circulation.	Digitalis is lacking in this calmative action by itself, and which it possesses only indirectly, owing to the improvement of the circulation which it produces.
The action of strophanthus and of strophanthin is produced very quickly. The tincture taken by the gastric route acts at the end of an hour.	The action of digitalis and of its glucosides is slow. Taken by the mouth it is produced at the end of about twenty-four hours.
The action of strophanthus and strophanthin disappears quickly because of its rapid elimination. The action of a medium dose lasts for twenty-four hours at the most, that of a stronger dose for several days. The action of strophanthus is comparable to the burning of straw. Its cumulative action, therefore, is feeble and cannot be produced except with strong doses.	The action of digitalis and of its glucosides disappears slowly because of the slowness of its elimination. The action of an anti-asystolic dose lasts about fifteen days. It is therefore sustained in action. Cumulative action is very great.
The distention of the auricles is greater with strophanthus than with digitalin.	
Strophanthus sharpens the appetite.	Digitalis and its glucosides have a quite opposite effect.
In ordinary doses cumulative action is hardly possible. This is a great advantage in practice ordinarily because the surveillance of the patients may be less strict than when they are treated by digitalin and its glucosides.	Digitalin has its cumulative effect in ordinary doses. Its effects must be watched very minutely.

These signs are headaches and diarrhea.

Toxicology.—Toxic action is very unusual in man. An adult who had taken 2 to 5 Grams (30 to 75 grains) of the tincture presented various threatening symptoms but did not die. Some cases of death have been reported after the intravenous injection of strophanthin. This remedy is not of value *in extremis*. In such cases there is a burden on the heart, which may cease beating *in spite of* medication, not *because of* medication. However, the action of this remedy by the venous routes is so marvelous and so rapid that one can comprehend that a heart weakened in the extreme cannot bear its remedial excitation.

Signs of Poisoning.—These are similar to those from digitalis. They are vomiting, first of gastric origin, then central; pronounced visual disturbance; cardiac pain.

The treatment consists in lavage of the stomach; hypodermics of morphine and camphor; hot enemas to replace the liquids lost by vomiting; ice by the mouth; rubbing the limbs to reestablish circulation.

III. Doses

Gastric Route.—In urgent cases 15 to 20 drops of the 10-percent tincture of strophanthus acts strongly at the end of one hour; its action lasts twenty-four hours. In ordinary cases 2 to 10 drops three times a day has the effect described above. Pure crystalline strophanthin of Merck should be given in doses of 1 to 3 milligrams and 1 centigram a day.

Strophanthin Boehringer is used in 1 : 1000 solution, giving from 10 to 20 drops a day. The ordinary dose of crystalline strophanthin is 0.7 to 1 milligram in cases where one desires quick action, and 0.4 to 0.7 milligram per day to obtain the ordinary effects of digitalin.

For Children.—The maximum single dose for children is:

Age.					Dose				
At	2	years	the	dose is	2	centigrams	(	1-3	grain)
"	4	"	"	"	5	"	(	3-4	")
"	7	"	"	"	10	"	(1	1-2	")
"	10	"	"	"	12	"	(2		")
"	13	"	"	"	25	"	(4		")
"	17	"	"	"	37	"	(6		")
"	20	"	"	"	50	"	(7	3-4	")

(Note: 1 Gram equals 60 drops.)

These doses may be repeated four times in twenty-four hours.

Intravenous Route.—It is highly important to remember the following facts:

Strophanthin introduced directly into the circulating fluid acts ten times more strongly than when taken by the mouth. In the present state of pharmacodynamics every acute insufficiency of the heart still capable of being remedied can be combated by the intravenous injection of 1-2 *to* 1 *milligram* (1-128 *to* 1-64 *of a grain*) *of strophanthin*, which Boehringer dissolves in 1 centigram (17 minims) of water. This injection should be made very slowly. In very severe cardiac cases and in arteriosclerosis it is a good test of individual susceptibility to inject 0.3 to 0.5 milligram 1-200 to 1-130 gr. a dose which may be repeated twenty minutes later. Kiehl recommends this injection in cases in which it is necessary to obtain digitalis action immediately (*sur le champ*), at any price. Such an injection increases very strongly the contractions of the heart, slows the pulse considerably and relieves the arterial tension. It influences the rhythm of the heart very favorably. The quantity of the urine is increased in a notable manner and the passive congestion of the viscera is reduced.

Some individuals struggling with "air hunger," and already experiencing the agonies of death, are restored to normal equilibrium by such injections. The clinical picture, big with menace, is changed within a few minutes. In this way the moribund more than once have been recalled to life.

In grave pneumonia and its complications in the aged, in the cardiac failure of diphtheria, strophanthin has certainly diminished the mortality. On the other hand, when time is not absolutely pressing, it is clearly an advantage to resort to digitalis. Strophanthin intravenously injected is a remedy for extreme urgency only, since it has produced death by the severity of its action. Sometimes it lights up the fever, and it may produce a very severe local inflammation and thrombus if a part of the liquid penetrates into the adjacent subcutaneous tissue in place of passing entirely into the vein.

Let us recall that digalen in intravenous injection may replace perfectly strophanthin given by the same route. In this case the local irritation is much less. This local irritation should be treated by the application of ice. The intravenous injection, in the dose indicated, would have a cumulative effect. In any case one will not inject more than 1.5 milligram (1-40 grain) in forty-eight hours.

Intramuscular.—In the collapse of infants from 1 to 4 years of age, in the pneumonia of measles, for example, one may inject into the muscle 0.1 to 0.4 Cc. of strophanthus Kombé of 10-percent strength.

Some Points of Interest Relative to Strophanthin.—Strophanthin is absolutely superior in mitral regurgitation. In cardio-aortic lesions, arteriosclerosis with or without nephritis, where digitalin is not without its inconvenience, strophanthin succeeds because it has no vasoconstrictor action.

In the cardiopathies of infancy it is very useful and well tolerated.

Strophanthin is not the remedy for the treatment of dyspnea, as that is due to lack of compensation, in valvular disease for example, but it is useful in the cardiopathies in which nervous troubles predominate. In these cases it fortifies and calms. It has the same action in phthisical patients and the neuroses. In these cases it is a good plan to mix the tincture of strophanthus with an equal amount of tincture of valerian.

Erb employs strophanthin with success in Basedow's disease.

Contraindications.—Strophanthin is contraindicated (in the same way as digitalis) in bradycardia due to defects in conduction in the column of His.

Diagnostic Employment.—When there is simultaneously renal and cardiac insufficiency it shows which is the predominant ailment and indicates if one can employ simply digitalis or if it is necessary to employ renal remedies also.

Final Considerations

The blood is the greatest organ of the body, the bond between the exterior and the inner organism; it carries to the cells nutri-

tion and oxygen; it is a disinfectant and a producer of energy. The blood is the essence of the organism and of life. The heart is the motor of the blood. Remedies of the digitalis group sustain and reinforce this motor; they therefore sustain and reinforce life. Such a remedy is by far the greatest of remedies, but it is proper to place by its side strychnine, the excitant of the gray matter of the cerebrospinal system and by its intermediary of the muscular system, and stimulant also of the excitomotor intracardiac centers and consequently a stimulant of cardiac contraction. The association of digitalin and strychnine is the battle-horse of the dosimetrist upon which depends most of his successes. The dose of strychnine is 1-130 grain, to be repeated from hour to hour until effect, without exceeding 10 to 15 granules per day.

[As our readers well know, the French have for many years found their digitalin so satisfactory that they have not considered it worth while to employ the numerous digitalis preparations emanating from other countries. French digitalin is the crystallized variety; it is insoluble in water, manifesting its effects in twenty-four hours, and enduring two weeks. It is obvious that this is altogether a different agent from the Germanic digitalin, water-soluble, manifesting its action within a few minutes, and enduring twelve to twenty-four hours only.

The conclusion we are driven to is that the French employ digitalin for a different set of cases from those for which others utilize the foxglove preparations.

Huchard and other French clinicians have laid down the uses and administration of their digitalin with a most admirable precision, as shown in Tissot's masterly articles. We demand an agent for more pressing emergencies, one that will enable us to cope with heart failures promptly. It is to be feared that the use of digitalin to secure a sustained elevation of cardiac force is not so generally comprehended here as it should be. For this application the French digitalin is very well suited; but we could not possibly employ it in minimal doses repeated every half hour, as we do the soluble digitalin termed Germanic. It is to be regretted that this latter is not known by its true designation, viz.: digitalein.

In the main, Tissot's estimate of strophanthin agrees with that of Stone, the gist of whose paper is presented in the editorial department. There seems but little difference between its action and that of digitalein. Both act quickly, the latter more so; both are water-soluble; and neither exerts much vasoconstrictor effect—strophanthin even less than digitalein. In general dropsies where the indication is to "canalize" the relaxed circulation we should prefer the French digitalin if we had not so powerful an agent in apocynin. Between this and digitoxin the difference lies in the speedier action of the former and its smaller tendency to accumulate; apocynin is less potent and enduring, and its cathartic action is generally useful.

This whole discussion is significant as indicating the extreme nicety and accuracy with which the selection of remedies may be made when we make use of definite chemical bodies of absolute purity. Substitute this for the clumsy, blind guesswork of the shotgun method, and the practice of medicine begins to be satisfactory—and even charming as an avocation.—ED.]

Good Judgment in the Profession

In this short but thoughtful article Dr. Robinson makes an appeal for more sober, thoughtful "common-sense", associated with a mental outreach for all that is good and helpful in medicine

By BEVERLEY ROBINSON, M. D., New York City

NEXT to honesty in medicine and surgery, is sound, practical commonsense. Of course honesty, when combined with the latter, is beyond price. But fools and ignoramuses are frequently honest in purpose, but their purpose is faulty because knowledge and reasoning are lacking. If a knave be sharp, shrewd, worldly minded, he will avoid doing harm because he can and will see that by doing an irrational act, even though it may give him temporary and pecuniary advantages, it will in the end be surely to his discredit and impair his success. Therefore he does not, *will not*, take the risk. How often do we hear men say, in speaking of some distinguished surgeon or physician, "He has good judgment;" and in saying this they intend to and do pay him the highest praise.

What is the use of mere skill, of experience, of age, opportunity, success even, if at the end of it all we are regarded by our peers as lacking that essential thing, "horse sense."

There are enthusiasts among us. Be it so! When enthusiasm is properly tempered and controlled, it is most valuable. But enthusiasm is part of youth and inexperience; with ripening years, broader and saner views, we lose in proper measure that enthusiasm which grasps every new idea, embraces every "ism" or "pathy," popular for the moment, as though it were the final reading of life and its immense, changing, but ever-recurring problems.

How easy to be specific after these generalities given with the purpose of starting wholesome thought in many who are too eager to be up and doing, to swallow, as it were, with renewed relish every delectable thing that is served for their passing, fleeting satisfaction; new surgical methods, operations, doings all along the line, such as rubbing up the peritoneum of the cirrhotic, peeling capsules off kidneys or seminal vesicles, abdominal sections to remedy bad results of previous unnecessary operative interference and to make recurrence of newer adhesions for older ones displaced or exsected.

The pity and sorrow of it all! *Cui bono?* There isn't any, unless conscience and commonsense ultimately prevail. As to medicine, groping as we do and are continuously, why hazard and believe in every new and unproved medicinal agent vaunted by each newcomer in the pharmacist's trade? Why take people's time and money and happiness and peace to have them day after day run to the specialist's office for an exaggerated and useless, not to say harmful, treatment, many, many times? When we really know and only do what is needed, how much disappears and is put in the scrap-heap of worthless, vain interference.

Look at the tongue, take temperature, feel the pulse, estimate heart-beats, try the muscles, interrogate stomach and bowels with proper, close questioning, examine urine and feces, and then bring wise, knowing empiricism to your aid. Not the empiricism of the charlatan or old-fogy society faddist, but the empiricism of the gray old doctor who has watched and loved and tended his patients with unalterable fidelity, and who has never been afraid or ashamed to learn from the devoted mother, the careful, dutiful old nurse; and who has also learned during a life-time all the schools, the hospitals, the laboratories could tell, to that date and time when he has thoroughly removed the wheat from the chaff, and

knows where the great kernel of harvest truth finally exists for ever and aye. *O tempora! O mores!*

[We wish we had written this ourself. We wish we could have written it. Dr. Robinson has in mind the type of doctor we also thought of while writing the editorial on "Functional Disease" which appears in this number of CLINICAL MEDICINE. The type exists in many a city, town, and secluded hamlet. It constitutes the backbone of the profession, giving worth and dignity to the mass.—ED.]

Limitations of the Emmanuel Movement

A description of some of the methods of mentally impressing and "curing" the sick which have been practised in the past, compared with the most modern phase of psychologic therapeutics

By JAMES G. KIERNAN, M. D., Chicago, Illinois

IV

THAT cropping up of neuropathic phenomena in "healers" which is regarded by their adherents as evidence of sanctity appears in Greatrakes' peculiar odor. This, like stigmatization[1] and halos, is peculiarly frequent not only in hagiology but also in neuroclinical records.

About three decades ago, W. A Hammond, [2] in a paper read before the American Neurological Association, called attention to the fact that the "odor of sanctity" ascribed to the saints by Görres had a neuropathic explanation. He pointed out that odors were emitted during conditions of hysteric excitement, of sexual excitement, and of religious exaltation, which so often is associated with these two conditions.

Féré [3] has recently described three cases which give a like explanation of the appearance of the halo. In two of these he has witnessed the phenomena. Two of them were cases in migrainous females, in whom, during the course of a migraine crisis, there suddenly appeared around the head an orange-colored light stretching out from it for twenty centimeters. At the same time the skin had an orange tint. In one of these patients the phenomenon lasted several hours, in the other but a few minutes. The third case was that of a woman subject to being suddenly awakened by subjective sensations with anxiety, in whom the halo accompanied the anxiety.

These cases are not the only ones on record where halos have appeared in consequence of neuropathic phenomena. They explain certain appearances sworn to in witchcraft trials.

The pluralistic philosophy of which James has lately been the exponent is a sublimation of that polytheistic fetichism which dominated to a certain extent Plato and some of the Platonists. This primitive materialistic psychology crops out in some queer shapes in metaphysicians who disdain ostentatiously any direct nervous connection between mind and body and claim that the two are distinct entities.

Sir William Hamilton, an extreme advocate of the purely spiritual nature of mind, discussing the differences between the minds of men and women, remarks: "A fact striking in itself and not without significance in relation to the present enquiry is that these intruders (parasitic animals of various kinds, worms in every loathsome diversity, reptiles armed with fangs, crawlers of a hundred feet, etc.) inhabit the frontal sinuses of women."

A similar intellectual confusion which refers physiologic results to parasitic and

[1] *Alienist and Neurologist*, 1909.
[2] *Neurological Contributions*, Vol. 1, 1881.
[3] *Revue de Medecine*, No. 4, 1905.

coarse-lesion pathology dominates the "normal" and "abnormal" psychologists who discuss psychotherapy. The curative powers are combined with the trophic powers of mind. There is no doubt, for example, that blistering can be produced by suggestion in unstable subjects, but the blistering so produced cannot be healed by suggestion. It must be treated surgically. The claim is false here as elsewhere that removal of the cause will remove the effects.

Primary causes often set in action secondary causes, and these persist long after the primary cause has ceased action. This fact is ignored by the gross-lesionists, the reflex-doctrinaires like the orificialists and the psychotherapists. Frequent hypnotization of hens, as Westphal showed three decades ago, will produce paralysis from strain on cerebral blood-vessels and resultant rupture. Hypnotism will not cure such paralysis, nor will stoppage of it.

The dualistic conception of matter and mind present in the classes named finds expression in various misinterpretations of such facts. Mesmer regarded mesmerism as an animal magnetism produced by the will of the operator, not a subjective influence on the patient. He used very suggestive apparatus for this purpose. His great boom came from taking an instability of neuropathic nosologic trend from the hands of the therapeutist, Störck, and the oculist Wenzell. Störck had diagnosed an emotional hepatic disorder as the gross-lesion cirrhosis. Wenzell had diagnosed hysterioamblyopia as amaurosis. Mesmer, through his "animal magnetism," removed these hysteric stigmata temporarily. Although the patient relapsed, the "cure" converted Dr. Deslon and other physicians from opponents to enthusiastic adherents of "animal magnetism."

The animal-magnetism bubble thus created did not burst even when Franklin, Bailly, Cabanis and Lavoisier exposed its subjective nature. It spread with even more rapidity with instabilities than did Eddyism, orificialism or osteopathy in the nineties. Eddyism, orificialism and osteopathy owe their chief potency to mobilization of confidence operators and instabilities. The results of charlatan mobilization are peculiarly visible in the osteopath. Still of Kirksville (Mo.) by his dreams and visions produced a recrudescence of the old fetichism of the bone-setter.

This variety of quackery, although pilloried by Hogarth in his "Company of Undertakers" still survives. An enormous, fat, ugly, drunken woman, a haunter of fairs, about which she loved to reel, screaming and abusive, in roaring intoxication, was a bone-setter; so much esteemed that the town of Epsom offered her five hundred dollars if she would reside there for a year. She called herself "Crazy Sally," and performed "cures" in bone-setting to admiration, and occasioned so great a resort to Epsom that the town made the above offer. "Crazy Sally" awoke one morning to find herself famous. Patients of rank and wealth flocked in from every quarter.

Attracted by her success, an Epsom swain made an offer of marriage to Sally, which she like a fool accepted. Her maiden-name Wallin (she was the daughter of a Wiltshire bone-setter, so named) she exchanged for Mapp. If her marriage was not in all respects fortunate, she was not burdened with much of her husband's society. He lived with her only for a fortnight, during which time he thrashed her soundly twice or thrice, and then decamped with a hundred guineas of her earnings.

She found consolation for her wounded affections in the homage of the world. She became a notoriety of the first water. Every day interesting "facts" appeared about her in the prints and public journals. One states: "The cures of the woman bone-setter of Epsom are too many to be enumerated; her bandages are extraordinary neat and her dexterity in reducing dislocations and setting fractured bones wonderful. She has cured persons who have been twenty years disabled, and has given incredible relief in the most difficult cases. The lame come daily to her, and she gets a great deal of money, persons of quality who attend her operations making her presents." The "poets" of the press thus lauded her:

"On Mrs. Mapp, the Famous Bone-Setter of Epsom"

"Of late, without the least pretense to skill,
Ward's grown a fam'd physician by a pill;
Yet he can but a doubtful honor claim,
While envious Death oft blasts his rising fame.
Next travell'd Taylor fills us with surprise,
Who pours new light upon the blindest eyes;
Each journal tells his circuit through the land,
Each journal tells the blessings of his hand.
And lest some hireling scribbler of the town.
Injure his history, he writes his own.
We read the long accounts with wonder o'er;
Had he wrote less, we had believed him more.
Let these, O Mapp, thou wonder of the age!
With dubious arts endeavor to engage;
While you, irregularly strict to rules,
Teach dull collegiate pedants they are fools;
By merit, the sure path to fame pursue—
For all who see thy art must own it true."

Mrs. Mapp continued to reside in Epsom, but visited London once a week. Her journeys to and fro she performed in a chariot drawn by four horses, with servants wearing splendid liveries. She used to put up at the Grecian Coffee-House, where Sir Hans Sloane witnessed her operations. He was so favorably impressed by them that he put under her charge his niece, suffering from a spinal affection, or, to use the exact scientific language of the newspapers, "whose back had been broke nine years, and stuck out two inches." The eminent lady went to the playhouse in Lincoln's-Inn-Fields to see the "Husband's Relief" acted. Her presence not only produced a crowded house, but the fact that she sat between Taylor the quack oculist on one side, and Ward the dry-salter on the other, gave occasion for the production of the following epigram, the point of which is perhaps almost as remarkable as its polish:

'While Mapp to the actors showed a kind regard,
On one side Taylor sat, on the other Ward;
When their mock persons of the drama came.
Both Ward and Taylor thought it hurt their fame;
Wonder'd how Mapp could in good humor be,
'Zoons!' crys the manly dame, 'it hurts not me;
Quacks without art may either blind or kill.
But demonstration proves that mine is skill.'"

On the stage a song was sung in honor of Mrs. Mapp, and in derision of Taylor and Ward, which ran thus:

"You surgeons of London, who puzzle your pates,
To ride in your coaches, and purchase estates,
Give over for shame, for pride has a fall,
And the doctress of Epsom has out-done you all.
Derry down, &c.

"What signifies learning, or going to school,
When a woman can do, without reason or rule.
What puts you to nonplus and baffles your art;
For petticoat practice has now got the start.
Derry down, &c.

"In physic, as well as in fashions, we find
The newest has always its run with mankind;
Forgot is the bustle 'bout Taylor and Ward,
And Mapp's all the cry, and her fame's on record.
Derry down, &c.

"Dame Nature has given a doctor's degree—
She gets all the patients and pockets the fee;
So if you don't instantly prove her a cheat,
She'll loll in her carriage, whilst you walk the street.
Derry down, &c.

On one occasion, as this lady was proceeding up the Old Kent Road to the Borough, in her carriage and four, dressed in a loosely fitting robe-de-chambre, showing by her manner that she had partaken somewhat too freely of gin, she found herself in a very trying position. Her fat frame, indecorous dress, intoxication, and dazzling equipage, were in the eyes of the mob absolutely sure signs of royalty. She was immediately taken for a royal favorite, of German origin and unpopular repute, whose word was omnipotent at St. James's.

Soon a crowd gathered round the carriage, and, with the proper amount of swearing and yelling, were about to break the windows with stones, when the spirited occupant of the vehicle, acting very much as Nell Gwyn did on a similar occasion, rose from her seat, and letting down the glasses, exclaimed, with an imprecation more emphatic than polite: "———! Don't you know me? I am Mrs. Mapp, the bone-setter!"

This brief address so tickled the mob, that the lady proceeded on her way amidst deafening acclamations and laughter.

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[This brings to a close Dr. Kiernan's remarkable series, which shows how intimately the mind-healing fads of the present day are associated with similar notions in days long since past. Verily, "there's nothing new under the sun." These "new thought" healing fancies recur as regularly as the succession of the equinoxes, Our own noble profession, meanwhile. moves steadily and majestically onward!—Ed.]

The Correction of a Facial Deformity

A young soldier is struck in the face by a fragment of bursting shell, leaving a horrible deformity. Some years later this deformity is corrected by a clever plastic operation, which is herein described

By LUCIEN D. CLARK, M. D., Toledo, Ohio

MANY interesting as well as hideous facial deformities are from time to time presented to the specialist for correction, varying all the way from an embarrassing pigmented nevus to the more extensive and serious cases caused by burns or other injuries.

The subject of this interesting case is Mr. A. of Brockton, Mass., who was sent to me, through the kindness of Dr. W. H. Emery, to have some facial deformities corrected, and who gave the following history.

The History of the Case

Age, 29 years. Family history good. Was private in the Spanish-American war and, in 1900, was transferred from Manila to China to assist in quelling the Boxer uprising in the province of Yang-Tsun. In some unaccountable manner he, with others, was drawn within the zone of fire of either the British or Russian artillery, a shell from which exploded among them.

A fragment from the bursting shell struck him a glancing blow in the face, tearing away the nose from its position, cutting through the upper jaw and through the entire length of the hard palate. The right side of the face received the greatest injury, the right eye being destroyed and all the tissues from that side of the face torn loose, and the bony structures either destroyed or crushed and driven backward. How he managed to survive such horrible injuries is beyond one's comprehension, but after many weeks in a military hospital he eventually recovered.

The man presented himself for examination on September 12, 1908, and I found the following conditions:

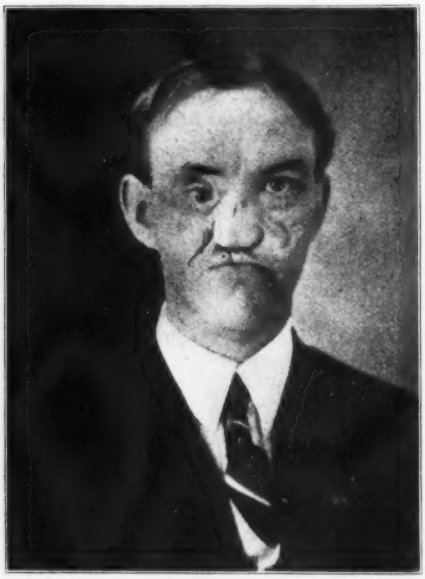
On the right side of the face there was a dense band of cicatricial tissue, 5-8 of an inch wide, extending on the site of the zygoma from a point over the roots of the zygoma forward and inward, over the site of the malar bone and across toward the nose to a point that would intersect a perpendicular line drawn from the inner canthus of the right eye, where it divided. One band followed the tissues of the inner orbital angle, while the other, taking a downward course along the ala of the right side of the nose, terminated in a cleft of the upper lip. A supplemental band of cicatrical tissue followed the nasolabial line down to a level with the upper lip, causing the tissues to bulge outward to a marked degree.

The wound in the inner orbital angle had destroyed the canaliculi, and an epiphoria as well as a dacryocystitis was present. As a result of contraction of the scar-tissue, an extreme ectropion added to his trouble besides making him appear all the more hideous. The loss of tissue of the right cheek was exaggerated because of the complete destruction of both zygoma and malar bone of that side of the face.

The nasal bones had been destroyed and the nose flattened, lying 3-4 of an inch to the right of the median line, the right ala dipping down into the depression in the right side of the face while the left ala was flattened out and blended with the tissues of the left cheek. The left malar bone had been crushed, and a band of cicatricial tissue extended from the inner canthus of the left eye in a downward and outward direction to a point midway on a horizontal line drawn from the left tragus to the ala of the left side of the nose. Because of the crushing of the left malar bone, the loss of tissue at this point was quite noticeable.

All but three of the upper teeth were gone, and the piece of shell causing the injury had ploughed its way through the upper lip at a

point a little to the right of the median line, backward and to the right, to the junction of the hard and soft palates. This detached portion of the alveolus had been driven backward about 1-2 inch and reunited im-



The patient prior to the plastic operation.

perfectly, leaving a cleft palate. The right eye was gone, and he wore an artificial one.

The Operation for Correction

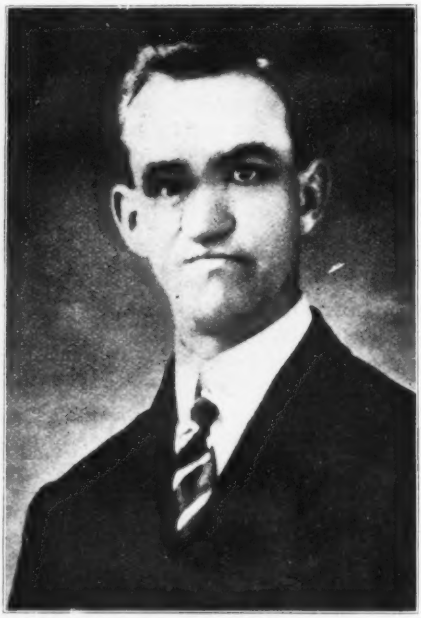
The plastic operation adopted, with a view to cosmetic results, was as follows:

The first two operations consisted in dividing all the dense cicatricial tissue that bound down the tissues of the face, thus giving a better facial elevation as well as improving the nourishment of the scar-tissue. Both of these operations were done through the mouth, the incisions being made with a Graefe knife and under chloroform anesthesia.

On the right side an upward vertical incision was made from a point over the right lateral incisor, under the right ala to a point just beneath the infraorbital foramen, then the knife was directed away from the nose outward under the eye to a point over the site of the right malar bone.

The incision on the left side was made in the same manner, and so that triangular cavities resulted, and these were kept packed and allowed to heal by granulation.

The next step was to correct the ectropion of the right eye. This required four sittings, and was done under cocaine anesthesia. A crescentic incision was made, following the bony orbit and carried deeply upward toward the lower conjunctival fornix and extended from canthus to canthus. A V-shaped piece was then excised from the skin at the outer



The patient after the operation.

canthus, the lid drawn into position and sutured.

The skin and fatty tissue that was dissected loose under the eye was then slipped upward over the underlying tissue and sutured to its new position. This operation was only partially successful, and was repeated, with some modification, until the desired result was obtained.

The nose was then attacked and detached bodily from the face, then sutured to a new location 3-4 of an inch to the left of where it had been. On account of the lack of

symmetry, due to the crushing of both malar bones, it was deemed advisable to allow a little greater breadth to the nose at the tip than would have been done otherwise. There being absolutely no elevation at the bridge of the nose, some trouble was experienced in securing a proper elevation, but by repeated paraffin injections, after the Gersuny method, a very acceptable nose with proper elevation resulted.

The harelip was corrected in the usual manner, after which the lip was lengthened by making a transverse incision completely through the upper lip at right angles to and through the scar of the repaired harelip, the transverse incision converted into a vertical one and held in position by deep sutures.

Some of the linear scars, where deep, were excised bodily by V-shaped excisions, while others were followed by parallel incisions, the skin dissected back sufficiently far so as to approximate without undue traction, the underlying scar curetted, the skin approximated and the scar buried. The lacrymal sac and gland were removed, which stopped the purulent discharge as well as the epiphoria of the right eye.

In all there were fifteen sittings. Paraffin was used in building up the depressions about the right orbit, depressions in the cheeks, and in building up the nose. Barring the two general anesthetics, cocaine, 1 1-2 percent in adrenalin, was used in all work except the operation of straightening the nose, for which a 20-percent cocaine solution was employed. All wounds healed kindly.

The accompanying photographs (the last one taken January 15, 1909) will show what great improvement is possible in many of these cases.

Reflections on General Practice

This article is the address of the writer, a well-known English physician, before the local medical society of which he is president. It is an eloquent appeal for independence from the "smoky arrogance of authority"

By WILLIAM AYRES, B. A., M. D., Brierly Hills, Staffs, England

THERE are two reasons for my choosing a paper with this title and addressing you on a subject about which most of you know a great deal more than your humble servant. In the first place, it happened that, about two years ago, I published in THE AMERICAN JOURNAL OF CLINICAL MEDICINE a paper entitled, "Notes on General Practice." The Editor thereupon called for more, and this, in a way, is to meet that request. But, then, also, there comes a time when most of us look back to reflect and see whether we have learned anything, and this paper is the result of such meditation.

I am perfectly well aware that most of the subjects that will be touched upon tonight are, to say the least, "*Renouvelée des Grecs*" (as old as the hills). For this reason I hope you will forgive me if I seem to be a "sciolist" and maybe one whom Carlyle would stigmatize as having "a great deal of unwise intellect," because, as Gibbon says, "every person has two educations—one which he receives from others and one, more important, which he gives himself." An old teacher of mine, when I went to bid him farewell, said to me, "You have passed the examination of our profession, you must now pass the examination of public opinion; for that, there is no sin but ignorance."

The "Authority" Which Prevents Free Inquiry

Dr. Georg Brandes in a paper entitled, "Main Currents of Nineteenth-Century Literature," says: "In a country such as that in which we live the principle of author-

ity, as the principle which prevents all free inquiry, is the worst, the most stupid and the most degrading that can be imagined and stands self-condemned. The man who by deriding or forbidding free investigation into any social question whatsoever prevents, as he undoubtedly does, the suggestion of hypotheses and the trying of practical experiments which might prove of value to his fellowmen, is a criminal for whom, if there were equity and justice upon earth, no punishment would be considered too severe."

Such type of intellect, gentlemen, belongs to the "crabbed textuist" who would prevent the practitioner from inserting a sponge full of vinegar into the uterus for postpartum hemorrhage, simply because no authority had said so, keeping and compelling everyone in the same "drove of custom and prejudice" in which he himself is confined.

It is high time that the physician became "unfenced" and thought for himself. Let him cast aside and have done with the "smoky arrogance" of the authority of some test-tube professor, for it is what you do that counts in your practice, not what other men think; therefore find no refuge in the ark of authority. Sir William Broadbent, lecturing before the French Academy of Sciences, while not doubling the wonderful advances bacteriological research has made in the understanding of disease, yet called a halt lest we pay too much attention to the seed and not enough to the ground on which the seed is sown.

So in therapeutics. The practician should not pay too much attention to him of the "smoky arrogance," but rather should he note for himself the effect of the drugs of our armamentarium; for it does not necessarily follow that, because so many milligrams of a drug has such and such an action on the skin or muscle of a frog, horse or guinea-pig, it will have the same action on so many kilos of humanity.

What Is a Dose?

This brings me, therefore, to the dosage of drugs and how they are applied. Why should we give such and such a dose, and what was the "smoky arrogance" that allotted that dose?

There are various ways of determining the mean dosage, such as by age of the patient, or his weight. Personally I think the latter the more satisfactory basis, more especially in children. Besides, as to the amount of drug, would it not be better to give a small dose frequently repeated, until the remedial or physiologic effect is produced, rather than run risks by massive doses—and more particularly so in children?

When I was a student I remember cramming my memory with the dosage of every drug in the materia medica. When I had been qualified some little time, however, I soon found what a foolish young man I had been and that I had given myself a lot of unnecessary trouble, for I quickly discovered that I could not rely on the galenicals as prescribed by the British Pharmacopeia. This I thought peculiar, but on probing into the matter the fact lay revealed that all the constituents of a drug—be they alkaloids, glucosides, or other active principles—do not necessarily have the same function. As an example, jaborandine and pilocarpine (jaborandi), or thebaine and morphine (opium) are directly antagonistic to each other, the logical conclusion being that I should only use those active principles of drugs of which I had thorough knowledge. I now employ thirty-two active principles and find that I can, with the application of a little intelligence, positively obtain the desired effects.

Shall We Treat Named Diseases?

After having duly examined our patient, are we to treat pneumonia, peritonitis, malaria, and so on? These names, I take it, should rather be "an intelligible tabloid for nonprofessional men's use." But we, as educated professional men, should treat the symptoms present and the patient in whom those symptoms exist, for obviously it would be wrong, for example, to treat a country bumpkin of full habit afflicted with pneumonia in exactly the same manner

as a town-bred man, because while bleeding would be of the greatest benefit in one patient it would promptly kill the other.

As to pneumonia, I will state that I prefer to regard this disease as a systemic infection, the local symptoms being only a local manifestation, for have we not in this complaint meningitis, peritonitis, myocarditis, arthritis, and last but by no means least, have we not appendicitis arising in the course of a socalled pneumonia? Never having tried Romer's serum in this disease I cannot speak of its value. A common practice about this district among the laity is to put the lungs of cows and calves to the patient's feet. If helpful, it may be, perhaps, by "bleeding" the patient into his capillaries and so relieving the congestion of the lungs.

Any subject of convulsions during infancy and childhood should, I think, be watched most diligently for any trace of what the French call *aptitude convulsive.*

As calmatives for children I would like to recommend two prescriptions which I dispense very frequently, as follows:

1. Nickel bromide .....gr. 1-124
   Codeine sulphate .....gr. 1-67
   Ipecac .....gr. 1-134
   Lithium carbonate .....gr. 1-25
   Oil anise .....gr. 1-134
2. Hyoscyamine, amorphous.gr. 1-500
   Oil cajuput .....gr. 1-67
   Oil anise .....gr. 1-67
   Menthol .....gr. 1-67
   Camphor monobromide..gr. 1-67
   Scutellarin .....gr. 1-32

Skin diseases are rather interesting complaints, often puzzling the most adroit clinician. From my own experience I will content myself by saying that I have found that for local application I have always obtained good results from Unna's plaster-mulls. However, we should always remember the close relationship subsisting between internal complaints and skin diseases, such as eczema, psoriasis, etc., being regarded as the visible outward sign of constitutional disorders. And we may notice in passing that kidney diseases give rise to various skin eruptions; also there seems to be a close connection between diphtheria and skin diseases, notably eczema and bullous eruptions.

The Therapy of Obstetrics

To the general practician midwifery has, in spite of legislation, a peculiar interest, and I have noticed the following things:

Some perinei will tear no matter what is done to prevent it. But as to this, why, during parturition, should we insist on supporting the perineum with one hand? You might as well expect a tight shirt not to tear over the elbow—not to mention that a perineum is very quickly and easily sewn up again.

If you want a good pain-reliever for a woman who is afraid of chloroform, one which can be given with safety and really will relieve pain and soften the os, I would like to introduce to your notice Buckley's uterine tonic. It consists of aletrin, bryonin, caulophyllin, helonin, hyoscyamine and macrotin. One granule is given every hour.

It has been calculated that 83 percent of acute pyemia-cases occurring during the first week end fatally, hence if the poison has passed beyond the uterine walls all the douching and scraping of the womb are of no avail. An acute septicemia, on account of its rapid evolution, can never be benefited by hysterectomy, but on the other hand, in cases of secondary septicemia with slow evolution hysterectomy is indicated.

Exophthalmic goiter chiefly seems to affect women between the ages of 15 and 45, that is, at the time of greatest sexual activity. A point in the morbid anatomy of this disease, as Mackenzie points out, is that perhaps every case of persistent thymus is one of potential or latent Graves' disease.

Epilepsy is notoriously a difficult complaint to treat, but I must say that what are known as Dr. Gelineau's dragees have given me better results than any other drugs.

Pilocarpine is used in uremic conditions, but it has proved itself to be "Janus-faced,"

sometimes producing edema of the lung. This complication can be relieved by atropine, gr. 1-100 to gr. 1-50. Another use that has been made of pilocarpine is in the treatment of erysipelas, the erythema coming and going as the drug is given or left off. It is used in sthenic cases.

Rheumatism and Other Troubles

A question which is arousing a great deal of interest and one which is spurring the wily microbe-hunters on to renewed efforts is this: "Is rheumatism a bacterial infection?" Of course one must pay attention to the researches of Clayton and others, but personally I take the side of Couch, as formulated in *The Medical Record*, who says that it is not bacterial but rather (1) chemical, (2) acid and suboxidation product, (3) is produced by starchy indigestion alone, and (4) is produced by fermentation. In proof of this I find that it is best treated by calomel and laxative salines, and anything that serves to reduce the acidosis, sodium salicylate in 1-6-grain doses being just as good as in doses of 20 grains.

A good bladder disinfectant, and a special favorite of mine, consists, per each capsule, of

Extract pichi.....gr. 1
Extract hyoscyamus.....gr. 1-6
Urotropin .....grs. 5

Viscum album, or mistletoe, has been given with good results in senile bladder and arteriosclerosis, the plant growing on the plum and poplar being the most active. I believe that there are only seven known instances of the mistletoe growing on the oak in England. Viscum album is also given in the hemoptysis of tuberculosis. For the night-sweats of tuberculosis I nearly always give agaricin, gr. 1-12, or atropine, gr. 1-500. There is this about the application of agaricin, that it should not be given when there is a tendency to the colliquative diarrheas.

I have several remarks to make on renal diseases. I am inclined to think that we place too much importance on the amount of albumin passed. Rather should we, as Dr. Foxwell says, "regard this as more or less of an expectoration, an exhibition of catarrh, and we should pay far more attention to the total amount of solids, uric acid and urea. The treatment of kidney diseases gives one pause and opens out vistas in the art of therapeutics.

For the convulsive neuroses (such as the tics, spasmodic torticollis) I have found hyoscyamine and gelseminine of use. In the spasmus nutans, or "gyrospasms of the head" of Peterson, Caille observed the fact that if he bandaged the eye the spasms stopped. Raudnitz observed the same fact in wryneck, but there were no ocular defects. There is, however, evidently a connection between spasmus nutans, eclampsia nutans and epilepsy.

I regard a bedsore appearing within the first few days after an attack of hemiplegia, the socalled malignant decubitus of Charcot, as a semeion of the most dangerous import.

For the sleeplessness of old people we frequently have great difficulty in prescribing. I would call your attention to the virtues of passiflora incarnata in such cases.

I suppose I have had more experience in the treatment of malaria than any of you, and I would advise you to take your slide before the administration of quinine, as it is well known that the hematozoa disappear rapidly from peripheral blood after this agent is taken. If you take the slide after its use you must ask the bacteriologist for a count of the large lymphocytes.

You have heard me inveigh with some acerbity against the "smoky arrogance" of authority. There is this, however, to be said in its favor: "Our overpraise and idealization of famous masters is not in its origin a poor Boswellism but an impatience with mediocrity." Let the general practician take courage; there are many things being done to better our lot, but as with everything else, "thou art enlarged by thy own shining and no longer mate for frogs or worms dost soar and burn with the gods of the empyrean."

To most of us, gentlemen, I think I can safely aver, the name of Shakespeare is

known, but whether you will as easily recognize the new and revised edition of one of his efforts, I am not so equally sure. Let me read to you this abstract from it:

DR. HAMLET'S SOLILOQUY

To practise medicine, or not to practise, that is the question—
Whether it is nobler in the mind to demand
Our fee in advance, or give powders, tablets and pills,
With a great number of visits and receive no reward?
Then swear—loud and deep, each time we recall
The deadbeats who our good offices have received
And our bills ignored. To swear—and by swearing say—
We will draw no more on our gray matter,
Or bear the thousand worries and forego
The sweet soothing influence of Morpheus,
To say nothing of the calomel wasted.
'Tis a consummation devoutly to be wished.
To sleep—sleep, and perchance to dream, that our erstwhile
Patients had succumbed, after suffering agonies unrelieved;
And in shuffling off the mortal coil found the devil waiting,
Whose claim could not be deferred.
There's the respect that makes calamity of so long a life.
For who would not be freed from a horde of worthless patients
Who make good promises but seldom pay.
The work—the worry—the many nights of sleep we lose—
The condemnation merited for profanity, and the impositions
That the patient doctor from the unworthy takes,
When he himself might swear less often, see fewer patients,
Have more money, with something to drink more to our taste
Than the waters of Marah, if we could insist on prompt settlement
And cash with every prescription for physic.
Then the dread of that grim specter of want before death
Would not trouble, and when summoned to stand
At the portals of Life or Death, to pilot the stranger
Through the perilous straits and amniotic seas,
We should demand our fee—in advance . . . 'Twould puzzle our patients,
But teach them rather to bear those pains they have
Than to fly to a doctor whom they owe for the last delivery.
Thus conscience would be easier for us all,
And the native hue and vision of the doctor become most rosy,
An enterprise of great pith and moment
For want of cash would not be burnt away.
For we should have money to burn.—
—J. E. STUTE.

* * *

Money to burn? Here's money to earn,
Awaiting your coming at every turn.
Your patients are crying aloud for relief,
And since you neglect them they turn to the thief,
The unprincipled quack who preys on their fears,
Relieves them of cash and leaves them in tears.
What do you know of the ills of the feet?
Does a case of the clap put you in a heat?
Do you show hypochondriacs out of the door?
Do you look upon varicocele as a bore?
Do your patients with piles never go to the quack?
Do catarrhs go away and never come back?
Do you treat all your surgical cases yourself
Or let them expend in the city their pelf?
If *you* see to all these, there'll be many more
Who will turn from your rivals and throng to your door,
For a chance to get famous you'll dolefully yearn,
And then, my dear doctor, you'll have money to burn.
—W. S. A.

I thank you, gentlemen, for the kindness with which you have treated my great failings and the help and assistance I have had while in the chair, and in bringing my remarks to a conclusion would like to recall a good story as related by Mark Twain. He says: "It is very easy to find fault if one has that disposition. There was once a man who not being able to find any other fault with his coal complained that there were too many prehistoric toads in it." This, you will agree, is the chief fault of this presidential address.

"Now that I have climbed
And won this height
I must tread downward
Through the sloping shades."

into what Sir Thomas Brown in his paper on Mummies would call "the misty vaporiness of oblivion."

"The Decline of the Prescription"

A further discussion of the problem, being a continuation of an article on the same subject which was published in this journal in the July, 1909, issue. The economic and professional factors involved are discussed with great care and absolute fairness

By A. L. BENEDICT, A. M., M. D., Buffalo, New York

THE editor has very properly commented on my first communication (see August CLINICAL MEDICINE, page 888) under the above title, making the criticism that it was mainly destructive, although it should be clearly understood that it was rather descriptive of an actual destruction that has already taken place than advocative of destructive measures. However, I am disposed to take the hint that constructive measures also deserve attention.

The Decline of the Prescription Conservative

But, just as old buildings are deliberately torn down in some cases to make streets and parks, it should be appreciated that to a considerable degree, the decline of the prescription is a conservative process.

As already stated, sickness is on the decline; serious lesions that formerly doomed the patients to years of invalidism with an enormous amount of palliative medication are now attacked radically and promptly, usually with nearly complete restoration to health, occasionally with death; but, in either case, the loss of prescription work by the druggist is permanent.

Again, both by scientific investigation and empiricism, we have learned that a great many drugs are practically useless and that many others, active against symptoms, do not ultimately benefit the patient. No physician of any common sense or sense of duty is going to be content with monthly administration of drugs to a woman with a menstrual disorder, unless the circumstances are exceptional. He expects, in the average case, to cure chronic constipation by some means or other, rather than to give cathartics for a life time. Only occasionally will he prescribe any one of the antipyretics in typhoid and other fevers, in spite of their demonstrated ability to reduce temperature. Druggists have complained not only of the decline in number of prescriptions but of the lessened complexity of the prescriptions written. Here, again, the destructive process is undoubtedly permanent and rational.

Pharmaceutical Progress a Factor in the Decline

The ingenuity of manufacturing pharmacists has rendered available the active principles of many drugs, which are accurate both quantitatively and qualitatively; which are, for practical purposes, more palatable and less likely to cause loss, by vomiting or digestive and other disturbances, than syrupy or mucilaginous or any other kind of elaborate mixture of the old-fashioned kind. Regard for the modesty of the editor prevents my being more explicit.

We are not going to turn backward for the sake of increasing the prescription business, however much we may regard the welfare of the retail pharmacist.

Moreover, convenience and regard for promptness, especially after the closing hours of the ordinary drugstore, as well as certain economic considerations, inevitably determine that a large share of this sort of medicine shall be dispensed by the physician himself. By this I do not intend a plea for a general usurpation of the pharmacist's function by the physician, but, in the long run, a large amount of the decline of the prescription is due to this factor and it cannot be prevented without serious inconvenience and even danger.

Turning to the strictly constructive part of the problem, it is manifestly impossible

to go into details. But, teachers, students and practicians must be impressed with the fact that while we have found many drugs practically useless and many others inadvisable in certain conditions, there has been too much "gallery play" along the lines of operative, mechanical, electrical, psychotherapeutic and other lines, and that drugs themselves deserve serious study and wise use, in an optimistic but not credulous spirit.

The medical-college and state-examining boards should, first of all, get together and discard several hundred "time-honored" but almost useless drugs. The Pharmacopeia should be simplified, standardized and rendered more elastic, so as to exclude a great mass of purely arbitrary facts, and so that we may save a great waste of time in memorizing details which apply to single drugs. Then, clinically, didactically, and with special reference to bedside prescribing and prescription writing, *the really definite facts of drug-therapeutics should be drilled into students and receive more attention from textbooks and medical journals and societies.*

For example, instead of spending fifty-five minutes of a clinic on diagnosis, pathology and symptomatology, and saying when the gong begins to sound, "We will give the patient arsenic as an alterative and digitalis to support the heart," would it not be well, half the time, or, at least, occasionally, to spend ten minutes in stating the exact condition of the patient, as already determined, and then to use all the remainder of the time in discussing therapeutic indications, why one drug of a group would be better than another, just why one preparation is chosen, what dosage, frequency of administration, and time of administration with reference to meals, etc., are best suited, how we must consider physiologic and chemic incompatibility in meeting various, perhaps contradictory, indications.

Lack of Detailed Instruction Concerning Pills and Tablets

There is one detail that ought to be met frankly, viz.: The student graduates with a general lack of information regarding pills and tablets. So far as he has heard of them at all, he has gained the idea that they do not represent drug-potency so well as old-fashioned galenicals, that they do not dissolve well, that they get stale, and that, ethically, they are off-color. There are certain drugs for which no definite active principle has yet been isolated and, unquestionably, many poorly made, unequally divided and unstable tablets.

But are not the majority of alkaloids and glucosides dispensed in tablets? Do the tablets containing them deteriorate with age? Are they not soluble after years' standing in a corked bottle?

Why is there any ethical problem connected with the physical state of a drug-preparation?

For many years one of our foremost dental colleges refused to teach students how to put in an amalgam filling or even to use an automatic plugger. The result was that the graduates went into practice unprepared to meet existing conditions. Are not many of our medical schools doing precisely the same thing with regard to a form of drug that is no longer a theory but a practical fact?

Lack of Preparedness on the Part of the Pharmacist

In a perfectly friendly spirit, the fact must be squarely met that the decline of the prescription is due in part to a lack of preparedness on the part of the retail pharmacist. This is due not so much to imperfect instruction as to inattention to practical business details. With all appreciation of the fact that the profession of pharmacy is not a bed of roses, and with every disposition to make allowances, when the physician is confronted with an indication for a drug, all he can think of is the problem of getting it to the patient as promptly and as accurately as possible.

This spring, the pharmacists of Buffalo invited the physicians to a joint meeting at which they exhibited their own preparations of drugs, which seem to be mainly imitations of proprietary liquids, though there was a jar of "cataplasma kaolini." They

made an urgent plea for prescribing along good, old-fashioned lines, instead of using "nostrums."

The very next day, I had occasion to prescribe a composite pill. By yielding my prejudice in favor of metric units, what was wanted could be obtained cheaply, elegantly and promptly from the stock of two or three manufacturing chemists. Remembering the heart-to-heart talk of the evening before, I wrote a prescription for extemporaneous compounding, though most patients prefer the shining spheres of the wholesale house to the drugstore pill in a box of powder, strongly suggestive of the trail of a rat in a meal barrel. Result: the druggist telephoned that he could not very well compound the pills and *asked if he might not substitute one of the ready-made formula originally intended!*

Such experiences are not unique. A pharmacal profession is not needed solely to fill liquid mixtures. If—and these are not imaginary examples—the average druggist can not prepare a salol coating, can not make his own capsules or at least select prepared capsules according to solubility, cannot prepare suppositories except by filling blanks of cacao butter, cannot prepare Einhorn's beads, glycerin-gelatin bougies, solidified liniments, etc., then the prescription business must decline just as inevitably as the practice of a physician would decline if the latter could treat bronchitis, rheumatism, gonorrhea and similar common diseases, but was unprepared for diabetes, leukcocythemia, typhoid fever, etc.

Manufacturing Chemists Have Been Leaders

Manufacturing chemists have, in many respects, led the medical profession, not only in providing them with convenient and elegant preparations of ordinary drugs, but in introducing new chemic substances, biologic products for diagnosis and treatment, and various other therapeutic novelties. It is true that in many instances manufacturing chemists have held exaggerated views of the value of their inventions and adaptations and, in some instances, have apparently resorted to fraud; yet several wholesale manufacturers have maintained scientific laboratories of high grade and have shown the most humane spirit and far-sighted business acumen in frankly withdrawing unsatisfactory products after preliminary trial, and in lending their aid to physicians reaching out after some improved addition to their armamentarium.

With no intention of being captious but as a plain statement of fact, the average retail druggist has not kept pace with his manufacturing competitor. He has not even kept in stock such preparations as have been made fairly familiar to advanced physicians. For example, there are several drugs, relatively new and not in very common use and yet which have maintained a fair degree of vogue for several years. Allusion is not made to proprietary compounds but to simple organic chemicals.

My experience is that a prescription for these substances cannot usually be prepared from stock on hand or easily obtained by borrowing from another druggist, but that a special order must be sent to have the drug got from New York. Yet Buffalo is a city of four hundred thousand population and with consulting practice covering a population of at least a million. It would, of course, be unreasonable to expect every druggist to keep in stock every drug, but it would seem that some cooperative scheme would be feasible by which any but the rarest and newest drugs could be obtained on a few hours' notice.

It does not require more than a few experiences of waiting a day or a week for a drug needed promptly to lead to the importation of a personal stock, for direct dispensing. Even though the drugs in question are few and seldom used by the average practician, they are likely to represent individual hobbies which, in the aggregate, mean a considerable decline of written prescriptions.

Poverty Plays Its Part

Another reason for the decline of the prescription is the poverty of a considerable and growing part of our population and of

the physicians who attend it. While I speak more of the past than of present personal experience, this economic factor is a considerable one in the decline of the prescription. A large share of practice is done on a basis of 50-cent office fees and one-dollar house-call fees. Often the patient goes to the office with little more than the physician's fees in his pocket. He may need two or three simple drugs representing a cost, for dispensing in the office, of a very few cents. If the physician writes out prescriptions, the pharmacist gets about as much as and perhaps more than the doctor's fee, and the latter has a charge on his books of very doubtful value.

True, this is a sordid, unpleasant way of looking at the matter, but it is a question of bread and butter. Such a conflict of interests can be solved in only two ways. Either the man who has the choice between his own and someone else's interests will decide in his own favor, or the druggist must make the same proportionate charge to a poor patient that corresponds to the minimum medical fee in a poor district.

Without direct reference to practice among the very poor, the physician would be spared considerable embarrassment and would write more prescriptions if he could predict pretty accurately the amount of the pharmacist's charges and base them on actual cost of drugs and labor of compounding.

Without in any way implying that the latter charges are extortionate, there is so much fluctuation in them, and they seem to be based so much on quantity of diluent rather than on cost, that the physician is hampered to a considerable degree by the fact that a surprising number of well-to-do but perhaps too thrifty patients require a close estimate of expense for this item. It would seem that a definite standard of charges by druggists, with a reasonable minimum, an average for weight, etc., and a percentage profit on cost of material, with discount for poor patients, would materially increase the amount of prescription writing. The physician very often has to make a fairly close estimate of the cost of his services in advance, and to grade his charges down to the ability of honest but poor patients. The druggist must do the same or lose a considerable though minor part of prescription work.

Carelessness on the Part of the Druggist

Another factor in the decline of the prescription is carelessness on the part of the druggists. Today I have had to apologize to a patient temporarily out of town because a druggist, in good standing, ordered a teaspoonful instead of a tablespoonful dose. Last week, "three hours after meals" was changed to "three times a day." Last month, a patient was kept waiting a week simply because the medicine was not delivered as ordered and promised. Within a few weeks a druggist telephoned me that I had forgotten to put down the amount of the last component of a prescription. The prescription was for the ordinary camphor-chloral mixture and the "last drug" was "*tere simul.*"

In another case, a patient was lost—by disaffection, not death—because the druggist instead of following the direction, "*Fiant chartulæ tales no xx*" (*tales* underscored in the prescription) divided the amount for each powder into twenty, with the natural result that the expected relief was not obtained.

In still another case, after writing an emulsion for bismuth subiodide, I fortunately made a jest that the patient would be taking red paint. The druggist put up bismuth subnitrate or subcarbonate and the patient detected the error.

Now, while such errors are not common in a statistic sense, they are overwhelmingly frequent as compared, for instance, with miscarriage of ordinary unregistered mail, with errors in cashing checks or calculating interest by banks and similar liabilities to mistakes in ordinary business. Yet the failure of conveying to a patient the right medicine, properly labeled, so far as I can see, is as important as the loss of a letter or manuscript in the mail or an occasional loss of a few dollars. If postal clerks or bank clerks made as many mistakes as druggists, our mail service and banking

system would practically come to a standstill.

It does not require more than one serious error to kill a patient and, with him, a good deal of prescription business. Many years ago, I was very nearly converted to routine self-dispensing because a druggist receiving two of my prescriptions at about the same time sent to a baby a few months old a codeine mixture intended for a few days' use by an elderly diabetic who, in turn, received minute doses of ammonium chloride at a time when sedation seemed urgently needed. Fortunately, the error was detected in time, to avert the respective positive and negative dangers, but largely because, as a hospital interne, I had some practical experience in pharmacy.

We are dealing with plain facts and, however much we wish to be courteous and generous, the average prescription entrusted to the average druggist must be at least as safe as the average letter or business paper, or we shall continue to hear complaints of the decline of the prescription.

Allusion has just been made to another reason for the decline of the prescription. The actual handling, weighing and measuring of drugs is not only a matter of interest but of practical value to the physician in many ways. This is one reason why, in many respects, the country practician excels his confrère of the city. Thus, entirely aside from economic, not to say sordid, motives and the reduction of chances of error, office dispensing has an advantage which must be offset by affording the physician an *entree* to the dispensing department of the pharmacy, in order to increase the temptation to throw the prescription into the hands of its proper profession.

Is the Pharmacist a Chemist?

Theoretically, the pharmacist is a chemist, but this ancient title is now hardly considered seriously at all. At an approximate estimate, I could write prescriptions for laboratory material amounting to 10 percent in value, though not in number, of ordinary therapeutic prescriptions, if the average drugstore was as well equipped in the matter of scales and graduates and simple test solutions as my own little laboratory. This is entirely independent of potential orders for routine analyses of urine, gastric contents, etc. While the former item would probably not be so great for the average practician, the latter would probably be almost the total laboratory work of many busy men in general practice.

Allusion has been made to the "prescription department" of the drugstore. Imagine the fate of a physician who had a corresponding "medical office," with insurance departments, real-estate branches, etc.! Even the possession of musical talent, the pursuit of scientific hobbies, etc., have to be kept in the dark by physicians, to avoid giving the impression that they are not devoting themselves to their profession. Not to mention the patent-medicine business, which not only alienates the sympathy of physicians but diminishes the lay demand for prescriptions, the average drugstore has so many lines of activity and the prescription desk is so often relatively small and inconspicuous, that the general effect is a constant object lesson to the detriment of professional pharmacy.

As a constructive article, this can hardly be called a success. There are inevitable forces at work to diminish sickness, to diminish the relative importance of drugs in therapeutics and of the formal prescription, especially in its old-fashoined, elaborate polypharmic form, as a token of therapeutics.

To a certain degree, the prescription must continue in its relative decline. There have been pointed out, however, many ways in which this decline may be checked, although, as a more forceful manner of presenting them, the destructive style has been followed to a considerable degree.

The constructive morals are, however, obvious, though it has been impossible to enter into details. The writer has tried to point out defects originating in the medical and the pharmacal professions impartially, though less space has been devoted to the former because the problems are more apparent and scarcely need more than brief mention for a medical audience.

William Walker: Physician and Filibuster*

A brilliant American, who was lawyer, physician and editor, and who became the dictator and president of a Central American republic; the significance of his career. Some of the prominent men who fought with him

By GEORGE H. TICHENOR, JR., A. B., M. D., New Orleans, La.
Former Member American Historical Association, and Yellow Fever Expert, Louisiana State Board of Health

FOR a number of years I have been collecting articles which refer to William Walker or some of the men who "soldiered" under him, and having the good fortune to possess his book, "The War in Nicaragua" (which is now out of print and of which there are very few copies in existence), and having visited many places which were the scenes of his operations and heard the story of his campaigns from the lips of many of his followers, I believe I am in a position to judge fairly the character of this "gray-eyed man of destiny" and the significance of his expeditions.

William Walker was born at Nashville, Tenn., in 1824. His father was a Scotch banker and his mother from Kentucky. His parents wanted him to study with the view of becoming a presbyterian minister. I cannot imagine how they could have seen anything in his disposition or qualifications adapting him to such a calling; however, even so young he had his own way and studied law at the University of Tennessee and later medicine at Edinburg.

His early life shows a disposition of restlessness and uncertainty as to what vocation to follow. He practised medicine for a while, then hung out his shingle as a lawyer in New Orleans, only in turn to become a newspaper man in the same city. About this time the gold-fever in California had become epidemic and we next find our subject associate editor of *The San Francisco Herald*. All these things only prepared him to become the master of events which then were about to take place. It seemed to be the spirit of the American people at this time to want to "extend the area of freedom" in any available direction. They would be called expansionists today.

His Invasion of Lower California

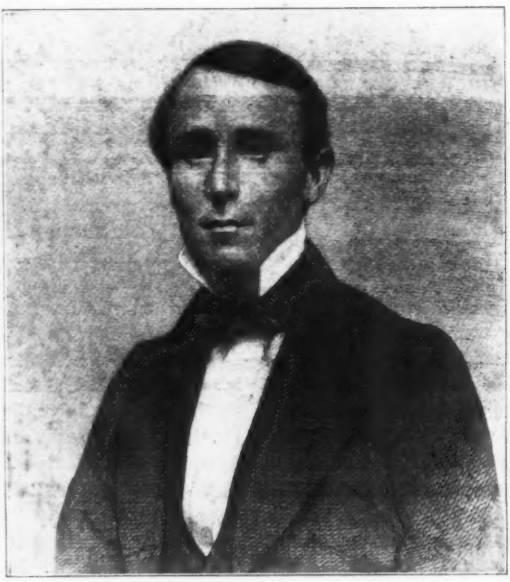
It was left to Walker to try to carry out this theory practically. In 1853 the seemingly opportune time arrived for Walker in Lower California. Both the United States and Mexico had troubles. Mexico was interested over the French aggression and the United States in the question of slavery. Gathering fifty-two men together Walker invaded Lower California, declared a republic and assumed the title of president. He secured some reinforcements, but the Mexicans succeeded in driving him across the border, where he surrendered to American troops. He was tried but acquitted of violating American neutrality.

Although defeated in his first attempt, Walker had gained valuable experience for the future. His vindication for such an invasion was that the "upper part of Sonora was at that time a disgrace to the civilization of the continent; and until a clause in the treaty of Guadalupe Hidalgo was rescinded by one in the Gadsden treaty, the people of the United States were more directly responsible before the world for the Apache outrages, for on none more immediately than the American people did the duty devolve of relieving the frontier from the cruelties of savage war. Northern Sonora was, in fact, more under the dominion of the Apaches than under the law of Mexico. In the vital function of government, the expeditionists may safely challenge a comparison of their acts with those of Mexico in Lower California; and the ruins and desolation which followed the

*This little article is dedicated to Don Senor Dr. Luis F. Corea, Nicaraguan Minister Plenipotentiary to the United States, in token of esteem and friendship.

unwise and the no less unjust measure of secularizing the missions were sufficient to forfeit the claim of the Mexican Republic to the allegiance of the peninsula."

About the middle of May, 1854, the last remains of this expedition reached San Francisco, Cal. Walker became editor of a daily paper owned by Byron Cole, who it seems had been interested in Central-American affairs for some time, especially those of Nicaragua. This same year a revolution broke out in the latter country, undertaken by Jerez and Castellon; and Cole, after visiting Castellon, obtained after some maneuvering a colonization grant, under which 300 Americans were to be brought in and granted the privilege of bearing arms. This grant Cole then forwarded to Walker.



DR. WILLIAM WALKER
The Central-American Filibuster

The contestants were the Legitimists and Democrats, and Walker, with a force of fifty-seven men from California, joined the latter. Soon we hear of him as commander-in-chief of the army and a year later as president of Nicaragua. Adventurers, hearing of this, flocked to his standard from pretty much all over the world. The poet, Joaquin Miller, Dr. Luckett, the destiny-rushed Nestor in medicine in Kentucky, Major John M. E. Grath of Louisiana, Gen. Charles Frederick Henningsen, later of the Army of Northern Virginia, and a host of other Southerners. Gen. Henningsen and his wife contributed $30,000, and some southern sympathizers gave as much more to the cause.

Walker's success was marvelous, when we look at it now, in so short a while. But like most men of his type, his ambition was boundless, and it became evident to the Central-American republics that if they did not check his progress, he soon would become emperor of them all, so they formed an alliance and declared war against Nicaragua.

At this time Walker had 10,000 men, and the opposing Alliance 21,000. He doubtless would have been victorious even then, had it not been that Walker had made an enemy of Vanderbilt "the First," the monarch of Wall street, who had the "pull" on the Washington administration, so gossip goes, and used it for his enemy's undoing. Vanderbilt withdrew his ships that conveyed the traffic to and from Nicaraguan ports, thus cutting off Walker's supplies. Walker, the bravest of brave, was never the wisest in some things. Thus he had to quit and return to the United States. His brave, though unsuccessful, fight against such odds made him a hero and he was received as such on his return.

He Joins a Revolution in Honduras

In a few months, however, Walker was back again to join a revolution in Honduras and adhered to the weaker party. The first thing he did was to capture Truxillo. However, the captain of a British warship informed him that his government held a mortgage on the revenues of that port, and

while discussing this matter, the Honduranians closed in on him from the rear, so that he was forced to make his escape. Later he was compelled to surrender to the British, supposedly for trial by British authorities, but instead was turned over to the Honduranians who considered a dead Walker better than a live one and proceeded to act on this conviction. All of this was done on May the first, 1857, in fine disregard of national honor and international law, to say nothing of the disregard by Captain Salmon (now admiral) of his plighted honor or of the supposedly secret orders from the pusillanimous administration at Washington which, according to Walker's friends, made Commander Davis of the United States Steamship St. Mary cooperate in this nefarious transaction.

It is not to be wondered at that the name of Walker to this day is despised by all Central-Americans. The Republic of Costa Rica erected a magnificent statue representing the repulsion of the filibusters, and whoever visits the capital city, San José, is sure to have it pointed out to him by some native, whose chest swells with pride at the thought that his country played such an important role in the Alliance. The very grave of Walker has long since tumbled into the sea, and I now understand that even the house of his birth is to be torn down to make way for commerce—such is the irony of fate.

The only thing that remains to remind us of this peculiar and intrepid man is his book, "The War in Nicaragua." There is no doubt that his experience in dealing with men of all phases of life and his newspaper connections, together with his superior education in early life had enabled him to write a book which is interesting in regard to narrative, description of nature and of thrilling events, accurate in detail, and fluent and forcible in style. I have found that his analysis in some instances of the character of the Central-American people as well as his description of the places, customs, manners and forms of government, and so on, are in accord with conditions existing there some eight years ago when I visited the same countries. He was probably a good practician of medicine, as he mentioned the stamping out of epidemics of dysentery and cholera among his soldiers in his book.

It appears to me that in some respects this man was similar in character to Napoleon. Under the pretense of championing the cause of civilization, he justified his rights to conquer a people less blessed, while his ambition soon outran and dimmed his sense as to a reasonable ability of accomplishing his desires.

Get Busy

Shake the moss roots from your shoes;
Get Busy!
Here's your creed and here's your tip;
Get Busy!
Practice that stiff upper lip;
Get Busy!
Here's a prophecy for you;
If you'll only up and DO
You'll triumphantly go through.
Get Busy!

The Therapeutic Indications of Uranalysis

The value of the examination of urine depends upon the help that it can give us in treating our patients. In the article which follows there are some suggestions as to how best to meet the indications revealed by the uranalysis

By HENRY R. HARROWER, M. D., Chicago, Illinois

POSSIBLY no other procedure among the diagnostic measures carried out by the general practitioner gives quite so many and so varied indications for treatment as the urinary analysis. The uranalysis, properly made and rightly interpreted, can be of the greatest practical everyday usefulness to the practising physician.

No attempt will be made in this paper to touch other than the more important points in the routine examination; nor will space be taken to outline treatment for diabetes mellitus, Bright's disease or cystitis. Aside from these important conditions, in which, of course, the urine examination is thoroughly recognized as essential, there are many points of vital importance regarding metabolism which are, unfortunately, usually overlooked.

The complete urine examination should be made in the investigation of *every case*, and always from a part of a carefully collected 24-hour specimen. The examination should include the quantitative estimation of the normal substances eliminated in the urine, and their relation one to the other, as well as the usual qualitative physical tests.

Dimished Urea and Its Indications

The first, and probably the most important quantitative test is for urea. Since urea is the principal nitrogenous waste-product eliminated in the urine its fluctuations must necessarily be of importance. The normal urea elimination for a healthy individual should be about 25 Grams in 24 hours, or practically 2 percent. Very frequently the uranalysis shows the urea-content from 25 to 50 percent, and at times even 75 percent, below the average, and this is, to say the least, an important point to the physician. It must be evident that if the urea is not being eliminated some of its component elements are being stored up in the economy, to cause trouble later on; or, and this is more likely, abnormal acids in the blood unite with the urea-precursors, probably in the liver, to form ammonia compounds. It has been stated that if the urea percentage is as low as 1.4 percent for several days in succession there is good reason to suspect definite renal damage.

The successful treatment of individuals suffering from a diminished elimination of urea is no easy matter. The amount of water taken in must be increased materially. An excessive amount of nitrogenous or proteid food should be eschewed, at least temporarily; and if an acidemic condition is present it must be controlled by the use of suitable remedies.

Sometimes in cases showing a persistent low urea-index there is an associated disturbance of the thyroid function which could be carefully looked into with profit. The administration of suitable doses of thyroid extract has, in a number of cases, shown a marked change for the better.

Frequently the liver is the principal seat of the trouble, the disturbance being due to the proverbial "sluggish liver." This, however, is not necessarily an indication for the ordinary socalled "hepatic stimulants."

Boldine (an alkaloid obtained from peumus boldo) has a very beneficial effect upon these cases of diminished metabolic activity. Given in doses of 1-60 to 1-30 grain, or even more, four or five times a day, boldine seems to have a definite action upon the hepatic functions, and while not increasing the bulk of urine passed, the solids, and in particular the urea, are considerably augmented. In addition to this, when possible, a course of physical exercise, either active or passive,

should be prescribed. If convenient the patient may be instructed to walk several miles each day. Breathing exercises, with a view to increasing the lung capacity, are also valuable. These, together with other physical measures such as hydrotherapy, electrotherapy, etc., materially increase oxidation in the body and assist in no small degree in accomplishing the desired end.

Low Total Solids

Perhaps a few words might be said regarding the conditions associated with low total solids. The normal excretion of urinary solids should be from 50 to 60 Grams per diem, but there is considerable latitude in these figures, the variation—usually downward—depending principally on the weight of the individual and the amount and kind of food he is taking, a diet low in nitrogenous elements causing an appreciable diminution in the urinary solids. When the solids are decreased 30 percent or more the conditions are serious and it is time to make a careful investigation and follow this with the best treatment possible. While a continued low specific gravity and diminished amount of urine may be entirely functional, very frequently it will be found that this is associated with organic renal disease. Provided this possibility can be eliminated, the treatment suggested for the increase of urea will also serve to increase the solids in general.

A remedy which is undoubtedly an important factor in raising the amount of solids eliminated is sodium succinate. Five grains taken three or four times a day, alone or with boldine, often will render very effective service.

The addition of buttermilk to the diet has also been found to be of value.

Indications of Excessive Acidity

An excessive degree of urinary acidity is another therapeutic indication which must not be overlooked, since it is an assured fact that many obscure and dangerous conditions are at least associated with, if not actually due to dealkalinization of the blood and its etiologic factors. The degree of acidity may be high (the normal varying from 30° to 40°) and yet, owing to a decreased amount of water passed, there may be a comparatively normal amount of acid units. (This figure is the relation between the degree of acidity and the twenty-four-hour amount of urine expressed in Cc., and should be about 40,000 in twenty-four hours.)

When the degree of acidity alone is increased the indication for treatment is evident—more water, thus diminishing the concentration of the urine and consequently its irritating qualities. Incidentally it may be stated that no drug will offer better service in conditions of acidemia than plenty of pure water—distilled or carbonated if so desired. If the acidity is high (the acid-units above 40,000 per diem) it should be reduced as carefully and speedily as possible, and dietetic suggestions given which will tend to prevent the further formation of an excess of acids in the body. The diet should be as free from meat as possible, and low in nitrogen. A free use of fruits, both fresh and cooked, as well as vegetables (preferably *not* dry legumes) and properly cooked cereals, is of value. The "lacto-farinaceous regimen" recommended by Combe is excellent.

The medicinal treatment of this condition is as necessary as it is efficacious. The alkalis (sodium bicarbonate, potassium or sodium citrate, magnesium carbonate, etc.) render excellent service. From 40 to 60 grains of sodium bicarbonate with plenty of water, alone or combined with suitable eliminants and intestinal antiseptics and given from one to three times a day, as remote from meals as possible, may be administered until the acidity has been reduced to normal, the doses then being decreased materially and given less frequently, always keeping the degree of acidity at or slightly lower than normal. Two or three weeks of this treatment will give eminently satisfactory results in the handling of many chronic conditions that are due to or associated with faulty metabolism and elimination, and which have previously resisted prolonged attempts of treatment by other less definite methods. When alkalis are indicated and constipation is present magnesia may be substituted for

sodium bicarbonate with even better results. If, on the contrary, diarrhea is present lime water in liberal doses (6 to 8 ounces three to six times a day) will be found more satisfactory.

Another salt which serves as an excellent urinary antacid and diuretic is potassium citrate. It is comparatively pleasant to the taste and is not likely to cause gastric irritation; 20 to 30 grains in water three or four times a day will usually be found sufficient.

In Conditions of Lowered Acidity

When the acidity of the urine is steadily lower than normal (a *series* of several uranalyses is always advisable) and cystitis or other conditions producing ammoniacal fermentation and decomposition of the urine are eliminated, the general metabolic activities will usually be found to be considerably below par and the therapeutic suggestions made previously become of value. These cases very frequently show a marked decrease in the elimination of acid for several days, weeks, or even months, having a periodical "storm" or "crisis" at which time the urinary acidity is tremendous, the general condition of the patient is serious, and the conditions are as completely opposite to the previous findings as could well be imagined.

The treatment of these cases is no easy matter, and it is a question whether alkalis should be given or not. At all events, no harm will be done by their judicious use under these circumstances, and, when combined with suitable elimination and stimulation, success will be assured.

With an Excess of Ammonia

The treatment of those conditions associated with an excessive elimination of ammonia in the urine is practically the same as that of acidemia, since, as has been mentioned before, the high ammonia-index is caused by the neutralization of urea-precursors by the excess of acids present in the body, thus substituting urea with ammonia compounds. The same is true when the so-called "acid bodies of diabetes"—acetone, diacetic acid and oxybutyric acid—are found. The vigorous use of alkalis will give help; that is, at least, temporarily.

The Indications of Indican

The indican and the indoxyl group remains to be considered. The detection of indican is a very simple matter, and although its importance *per se* still seems to be a matter for discussion, its presence, without a question, is a definite guide to equally definite treatment. Ninety-nine cases out of a hundred evidencing marked indicanuria have associated with it an intestinal disturbance of greater or less severity. It is, however, quite possible for serious trouble to be present, and yet no trace of indican be discovered in the urine; but it is safe to say that whenever indican is found, eliminative and dietary treatment is distinctly indicated, and in direct proportion to the amount of intestinal putrefaction present.

In addition to eliminants, of which there are a profusion (calomel in small broken doses still holding its own, saline laxatives following it closely, with phenolphthalein and possibly agar-agar in certain cases), the use of intestinal antiseptics gives valuable assistance. The examination of the urine from an extensive series of cases in which sodium sulphocarbolate (5 to 15 grains, three or four times a day) had been administered, showed a rapid and marked decrease in the fecal putridity and the accompanying urinary indican, with a corresponding favorable change in the usual unpleasant manifestations associated with autotoxemia.

Another therapeutic method which is now being extensively advocated, and rightly so, is the introduction into the intestine by the mouth, of cultures of the bacillus of Massol—an organism which, in addition to producing an excess of lactic acid, seems to have a definite inhibitory effect upon the putrefactive microorganisms in the bowel. Much is being written on this subject and it seems evident that this is a therapeutic measure that has come to stay. When the germs are administered in tablet form care should be taken to use them very freely—merely one or two tablets every few hours is not enough. On the other hand, if the patient can use

milk soured with these tablets, and likes it, this method is an excellent way to secure a large and flourishing growth of the "friendly germs" in the bowel.

In the treatment of these conditions associated with indicanuria, elimination and intestinal antisepsis are excellent, but they are not enough. The diet should be modified and strict injunctions given to the patient to avoid the hyperproteid diet. The dietary suggestions given previously are of value in these cases; in fact the socalled "antitoxic diet" is a most excellent adjuvant measure in the treatment of a large number of the chronic diseases and should be given fair trail.

SURGICAL AND GYNECOLOGICAL NOTES

BY EMORY LANPHEAR, M. D., LL. D.

CANCER OF THYROID

Malignant disease of the thyroid is not common, sarcoma being particularly rare. It occurs almost exclusively between the fortieth and sixtieth years, and more often in women than men (3 to 2). It most often is a degeneration of a previous goiter, usually of ten or more years' duration; adenocarcinoma being the common type, round-cell and spindle-cell sarcoma the rare. Papillary cystadenoma is the least serious, giving best hope of freedom from recurrence after removal. Death from metastasis in lungs or bones follows late excision—hence removal is indicated as soon as malignant change is suspected; even early ablation giving 70 percent of ultimate mortality.

PENETRATING INJURY OF BRAIN

In *The Virginia Medical Semi-Monthly*, May 7, 1909, W. A. Gill reports a remarkable case of "Penetrating Injury of the Brain," with recovery. The bullet entered the right temple, passing through the anterior portion of the cerebrum, and emerged at the left temple. Drainage was placed in each wound, an ice-cap applied to the head, a mercurial purge given, and the patient placed in a dark room with the head of the bed elevated. A saline solution (four ounces) was given every fourth hour, per rectum; ears and nose were irrigated with saline solution, and morphine was given to induce sleep. The temperature, controlled by cold sponging, did not exceed 103.5° F., and reached normal on the sixth day. The pulse ranged from 85 to 116. Speech was incoherent and the patient confused for some days.

Fourteen months after the injury the patient was apparently in good health, answered intelligently with no signs of annoyance, and submitted to an examination in a natural manner.

This remarkable case shows what may be done by modern surgery, even in cases where extensive injury has been inflicted upon the brain.

SYPHILITIC GROWTHS

Patients affected by tertiary syphilis, and particularly those who have been poorly treated, may present lesions dependent upon hyperplasia of the connective tissue resembling true tumors of the genitalia—lesions which have often been pronounced malignant or neoplasms of nonluetic character. They may have begun in the edema of the secondary stage and have continued to increase in size long after every other syphilitic manifestation has disappeared. It is useless to administer large doses of mercury and the iodides in the hope of causing absorption—extirpation is the only cure.

SALT FOR INTERNAL HEMORRHAGE

While sodium chloride has no effect on the coagulation of blood in the test-tube it does have a decided influence when ad-

ministered to a patient suffering from internal hemorrhage (as can be demonstrated easily by animal experimentation). Four or 5 Grams of salt (60 to 75 grains) being given by the mouth, the coagulating properties of the blood are much increased for a period of from an hour to an hour and a half, the effects becoming evident in a few minutes. If the tendency to hemorrhage returns later, the dose of salt may be repeated; or perhaps it may be better to substitute sodium or potassium bromide in the dose of 3 Grams (45 grains), the bromide having, further, a sedative action; that is, the patient gets 4 Grams of salt and 3 Grams of bromide at a dose.

This combined sodium chloride and sodium bromide treatment may safely be continued for two or three days if necessary, giving in the most urgent cases from 20 to 30 Grams (5 drams to 1 ounce) of sodium chloride and from 12 to 15 Grams (3 to 4 drams) of the bromide during the day. Any tendency to bromine intoxication is corrected by the sodium chloride.

CHRONIC OBSTRUCTION OF THE BOWEL

A cause of chronic obstruction of the bowel often forgotten is kinking of the colon at the splenic flexure. It is, indeed, not at all uncommon and is frequently overlooked or mistaken for something more serious. The treatment is to open the colon and clean out the impaction; then make a side-to-side anastomosis between the transverse colon and the sigmoid, if this can be done without much traction on the meso-colon. If too taut, the hole in the gut may be closed and a loop of the ileum (as close as possible to the ileocecal valve) carried across and anastomosed with the descending colon or sigmoid.

PERNICIOUS ANEMIA CURABLE BY SURGERY

Certain cases of pernicious anemia, if not all, appear to be dependent upon the presence of certain anaerobic bacteria in the colon where oxygen is not found; the bacillus aerogenes capsulatus being especially prominent. Therefore, as soon as pernicious anemia is recognized by blood-examination, the feces must be examined for B. aerogenes capsulatus; and if found in marked quantities, high colonic irrigation with weak solution of hydrogen dioxide should be instituted, with use of arsenic internally. If no improvement follows, the abdomen must be opened, the cecum brought into the cut and sutured there; a few days later it is to be opened and colonic lavage instituted twice daily, normal salt solution being the best.

NOSEBLEED

For the control of severe epistaxis (not checked by ordinary means) the following treatment will be found effective: Cut a strip of gauze one-half inch in width and a foot or more in length; moisten with saturated solution of boric acid; wring out excess of solution and dust heavily with powdered sodium perborate; tampon the nostril from in front, pushing the gauze well backward but not into the posterior nares. The tampon should be removed in twenty-four hours.

IODINE FOR HAND-DISINFECTION

After thorough scrubbing in soap and running hot water for not less than ten minutes (by the clock—not by guess) and proper trimming of the nails down to the quick, the hands may be immersed for two minutes in a solution of one dram of tincture of iodine to the quart of water, and then washed in 65-percent alcohol for two minutes. The same method (with less scrubbing) may be employed for cleaning the skin at the site of operation.

NONOPERATIVE CURE OF HYDROCELE

When a man will not consent to radical operation for cure of hydrocele the following plan of treatment may be adopted. After careful cleansing of the skin the sac is punctured with the trocar and cannula. When

about one-third or one-half of the fluid has been withdrawn, 2 drams of a saturated solution of bichloride of mercury in glycerin are injected and mixed with the fluid which remains (by gentle manipulation) and allowed to rest in the sac for from a half minute to a minute. The whole of the fluid is then drawn off to the last drop. Very little pain is experienced, and unless the patient is nervous and takes an anesthetic, he is able to move about immediately after the operation. For the first few days after the operation the patient must, as a rule, lie about, but need not in any case be confined to bed, and in a week or less he is quite well.

Provided the surgeon is careful that his hands and instruments are clean and free from micrococci when the puncture and injections are made, the injection produces a uniform result, i. e., sufficient aseptic adhesion to obliterate the sac and nothing more.

LIGATION OF HEPATIC ARTERY

Kehr has reported two cases of ligation of the hepatic artery: one for aneurism and one in the course of a cholecystectomy; both patients surviving. In my own practice, in one of my excisions of the gall-bladder it became necessary to do the same operation; the man still lives in good health.

::: THERAPEUTIC NOTES :::

FOR SEA-SICKNESS

When your friends and patients are "taking to the water" on their summer vacations you should try to do something to prevent the distressing *mal de mer* from which so many suffer. Let me suggest the following regimen. Before embarking on the boat have the patient "clean out" thoroughly with a saline purge. A light but sufficient meal before sailing. Then to prevent collapse give small doses of strychnine arsenate, hyoscyamine and caffeine, increasing the frequency of the dosage if the symptoms of dizziness and nausea put in their appearance. If there is faintness an occasional dose of glonoin is indicated. Try this method.

YEAST FOR ABSCESSES AND BOILS

Dr. F. Pollard of Garberville, California, makes the following excellent suggestions:

"When you have a boil to care for apply a breast-pump locally and give dry yeast in capsules internally.

"When there is abscess formation in any part of the body give a No. 0 gelatin capsule full of dry yeast every two hours—the kind you buy at any grocery store. The yeast plant uses all the nutriment that is left over in the alimentary tract, leaving nothing for the other germs. There is one great drawback to yeast—it isn't made in Germany to be sold in this country at $1.00 per ounce."

A REMEDY FOR TINNITUS AURIUM

In a letter just received from Dr. H. Dwight Jarvis of Rose Hill, Iowa, the suggestion is made that calx iodata should be tried in tinnitus aurium. The doctor says that two-thirds of a grain given every three hours has proved effective in a number of cases in his practice. He wants other members of the "family" to try it and report results. Please do so.

KEROSENE POISONING

In *The Medical World* Dr. W. S. Polk describes a case of kerosene poisoning. The patient was an infant, 18 months old. He was supposed to have drank a half pint of kerosene.

Thirty minutes later the child presented these symptoms: Complete relaxation; skin pale and covered with cold, clammy perspiration; a semicomatose condition from which it was hard to arouse him; no radial pulse could be found; very shallow, rapid, irregular respiration, not unlike that of a newly born infant with lungs partly filled with mucus; pupils dilated but responded to light; temperature subnormal. The oil was that ordinarily found at the grocers.

The child was given 1-30 grain apomorphine, hypodermically. This caused free emesis, the stomach expelling three to four ounces of the oil. In thirty minutes the patient was on the road to recovery, which was delayed by the depression caused partly from the apomorphine.

Dr. Polk found in other cases that ipecac and other emetics failed, excepting tartar emetic.

ATROPINE VALERIANATE IN ASTHMA

A valued correspondent in Nebraska writes us that he has administered atropine valerianate in several cases of asthma, giving 1-1000 grain every fifteen minutes. In an hour his patient was relieved and sleeping nicely, the breathing being normal. This experience has been repeated with like success. He had used atropine in the ordinary form before, but finds the valerianate decidedly more effective. The idea seems to us a good one and we would suggest that our readers who have troublesome asthmatic cases put this to trial and let us know the results.

THE COW IS DOOMED!

The possibilities of a new, fascinating and profitable industry, precursing a complete revolution in the dairy business, are suggested in the following report from the International Medical Congress at Buda-Pest, as printed in the daily press:

"Prof. Escherich described a valuable and highly interesting process of extracting human milk without especial difficulty to the patient by means of a suction-pump. The milk, he said, could be withdrawn and almost absolutely sterilized if, with the addition of hydrogen peroxide, it was heated to 145 degrees.

"Placed in sterilized bottles and kept in a cool place, it would remain unchanged for weeks and even months, and would be available at any time by simply warming it. In this way women's sterilized milk might be kept in stock by druggists. Experiments, said the professor, had proved that this milk was highly valuable for purposes of nutrition and as a remedy for acute intestinal disorders in children."

TOXEMIC HEADACHE

The most common cause of headache is fecal toxemia. Frequently there is a recognizable fecal odor to the breath. This headache is generally bilateral, and either general or confined to the frontal region. It is only temporarily relieved by the coal-tar and other popular headache remedies, all of which lose their efficacy in time, even when increased to perilous and sometimes fatal doses. Cathartics of the usual type are liable to increase the suffering at the time, as by them the solid masses in the large bowel are liquefied and more of the toxins absorbed. Hence the remedies that increase peristalsis are better than those that promote intestinal secretion. Phenolphthalein answers fairly well, especially if combined with a little senna. An enema of pure glycerin does well, setting up exosmosis from the blood into the bowel. Cascarin is also useful; though all these remedies that act on the lower bowel seem slow to one who has been accustomed to take phenacetin, caffeine and bromide, and get relief in a few minutes. The best treatment is preventive.

QUININE USED IN UTERINE PROLAPSUS

Carson treats prolapses of the uterus by injecting quinine into the broad ligament. The object is to irritate the cellular tissues, causing engorgement and new connective-tissue formation. The injection is made on

each side of the uterus into the vaginal wall, three-fourths of an inch from the cervix and a little below the external os. The needle is one inch long. If the cervix is much enlarged the point of injection should be nearer the cervix. The needle should be inserted half way between the normal cervix and the pelvic wall.

In chronic cases inject lower on account of the tendency of the bladder to pouch down. After the injection the uterus should be anteverted as much as possible; a pessary is then inserted and remains for three days, the patient lying on her face and side as much as possible so as to throw the uterus forward. Fourteen days should elapse between the injections, and the dose must be lessened one-third since the reaction will be greater. The operation, according to the editor of *The Practitioner*, is said to be simple, rapid, safe, effective and painless. Unfortunately the dose of quinine is not given.

CAR-SICKNESS

Prof. G. H. French, traveling on a train, had for a neighbor a lady who was car-sick. Prof. French having a supply of cactin in his case gave her some. She was relieved in a few minutes; and during the remainder of the journey, several hours long, she was free from this distressing complaint. This is a notable instance of the values residing in this remedy. If our readers have occasion to try it in similar instances, we should be glad to hear of the results.

ATROPINE IN PLACENTA PRÆVIA

Dr. E. Cook of Sheridan, Nev., reports two cases of placenta prævia in which atropine was administered hypodermically until the mouth became dry, the hemorrhage ceasing in both instances.

TREATMENT OF CHIGGERS

A correspondent in Missouri writes to ask us for the treatment, preventive and curative, of an attack of chiggers. If any of our readers has any experience of value along that line we shall be glad to hear from him. It has been suggested that an excellent means of prevention is to apply some antiseptic tarry soap in lather to the limbs, letting it dry on before pulling the stockings over them. As to treatment, it has been suggested also that the sore be touched with chloroform, spirit of camphor or kerosene oil, each of which is said to kill the parasite promptly and put a stop to the itching.

CHROMIUM SULPHATE: HOW DOES IT ACT

A subscriber, who, by the way, reports the practical cure of a case of exophthalmic goiter with chromium sulphate, submits this theory of its action:

"1. The action is on the central nervous system.

"2. The influence is directly on the lumbar ganglia, thence through the hypogastric plexus to the areas reached.

"For example, the hypogastric plexus from the last lumbar ganglion practically enmeshes the prostate gland. The theory seems to satisfy all the claims Kolipinski makes for the drug."

What do our readers think of this theory? And what experience have they had and what results have they obtained with this remedy?

CLIMATE FOR CONSUMPTIVES

Just now a good many of us are anxiously considering where we would better send our patients, at least those to whom the northern winters present perils which we do not care to have them face. Dr. Lena R. Whitford has a six-acre tract in Thomasville, Ga. We do not hear so much about Thomasville as we did some years ago; and that is a very good thing, since it shows that the town is not apt to be swamped by lungers in every stage who poison the atmosphere and render it perilous as a resort for those who simply have weak lungs. This climate Dr. Whitford has found suitable for a certain class, those whose heart is weak, who

need rest and quiet relaxation, with the best of service and food.

Dr. Whitford informs us that she has a small house and disposes her patients in tents on her ample grounds, they being fed and cared for from the central house. This is a simple and thoroughly practical method of dealing with these patients, giving each the ideal condition they should have, and preventing the great evils of jamming a number of these delicate patients into one institution where each may contaminate the air for the others.

This method has also the relative merit of being comparatively inexpensive, hence within the reach of those who can not afford the more expensive places. It would be worth while to communicate with Dr. Whitford, if interested.

CRATÆGUS IN DIABETES INSIPIDUS

A. W. Jernigan, in *Ellingwood's Therapeutist*, tells his experience with this remedy, used in a bad case of insipid diabetes, occurring in a child two years of age. It was passing a very large quantity of urine, the evacuations sometimes occurring every fifteen minutes, and was greatly emaciated. The pulse was rapid and feeble and there was great thirst. Cratægus was at first given with passiflora and belladonna, but the two latter were finally omitted and the cratægus administered alone. Five drops of the specific medicine were given every three hours. The improvement was marked almost from the beginning of treatment and the child was finally restored to health. Dr. Jernigan has since used the remedy in other similar cases and with equally good results.

The necessity for improvement of the circulation and the relief of central congestion (shown by dilated pupils and cold extremities) were the indications which led the doctor to try this remedy.

MACROTYS IN CHOREA

Dr. A. V. Lyon, in *Ellingwood's Therapeutist*, says that he recently has had three cases of chorea to treat. All of these were benefited by arsenic, but when this was discontinued, speedily relapsed. He then tried macrotys. The results were speedy, happy and permanent. We hope readers of CLINICAL MEDICINE will try macrotin in some of their cases of chorea and report results in these pages.

STROPHANTHIN

Hatcher and Bailey, in a report on the tincture of strophanthus and strophanthin, state that strophanthus has lost favor, from the general belief in the utter unreliability and variability of the tinctures and the want of a pure soluble active principle suitable for hypodermic use, as well as the utter confusion concerning the dose. Nevertheless they found the tinctures of strophanthus more nearly uniform than the tinctures of digitalis.

The pure active principle is now supplied in the crystallized strophanthin of Thoms. Concerning the doses their experiments led to the following conclusions: Half a milligram of crystallized strophanthin may be injected deeply into the muscular tissue once in twenty-four hours, without fear of abscess or other undesirable action. The single adult dose of crystallized strophanthin by the mouth is placed at five milligrams or less, the daily maximum dose at 30 milligrams. The single adult dose of the official strophanthin by the mouth they state at probably 10 milligrams, or 1-6 of a grain; the daily maximum adult dose 60 milligrams. The latter dose should not be used without further clinical experience and study of the factors governing absorption.

COPPER SULPHOCARBOLATE

Copper sulphocarbolate is on trial. It is sought in it to combine the powerful antimicrobic qualities of copper with an acid possessing similar properties. A milligram every hour is well borne. We should be glad to have reports from those who have tried it, and we hope others will give it a trial.

Therapeutic Dechloridation

It has been shown that there is a close connection between certain disease-conditions (edema, for instance) and the intake and output of the chlorides. Therapeutic measures are immediately suggested, which are discussed in this paper

AT the Congress of Internal Medicine held at Wiesbaden, Germany, in April, 1909, Prof. F. Widal of Paris spoke on the subject of "Therapeutic Dechloruration." [This method of treating nephritis and other forms of edema is of recent origin, so that the designation adopted for it is not as yet found in E. Littré's French "Dictionnaire de Médecine," 21st edition, finished in 1907. Neither do we find the word in the German "Enzyklopädie der Praktischen Medizin.," of Schnirer and Vierordt, finished in 1908. It is included, however, in Guttmann's "Medizinische Terminologie," edition of 1906, as also in Scholer's "Dictionnaire Médicale des Langues Allemande et Francaise, 1908." The first English medical dictionary in which I encountered the term is Dorland's "American Illustrated Medical Dictionary," 1906 edition. Here Dorland uses the French form, "dechloruration," but in his "American Pocket Medical Dictionary," edition 1909, he adopts the modernized English term, "dechloridation."—THE GLEANER.]

In his remarks at Wiesbaden Widal said that "in certain nephritic affections common salt is retained in the system." He himself has demonstrated how, while the osmotic equilibrium of the juices of the body is preserved by its active influence, the retention of this salt must necessarily also become the cause of water retention, as in some edemas. Achard noticed in patients who do not excrete the sodium chloride which they ingested that the excess of the salt disappears more quickly from the blood than from the fluids of the body, and, together with Leoper, he demonstrated analytically its accumulation in the tissues. He furthermore demonstrated analytically that the salt amount in the blood is not proportionate to the amount of salts retained and not excreted from the body. In 1902 Widal and Lemiere showed beyond doubt the part played by common salt in the pathogenesis of edema in Bright's disease by regularly increasing the edema through increasing the quantity of this chemical ingested.

The foregoing facts induced Widal and Javal afterward to formulate the principles of the dechloridation therapy.

Up to that time it was thought that the retention of all the various salts, as well as that of sodium chloride, is productive of edema, and Von Koranyi accused the products of the splitting up of albumin to be the cause of it. Achard believed that not only sodium chloride but also the various other substances dissolved in the blood play a part in the pathogenesis of the edema in Bright's disease. Widal showed that sodium chloride alone is to be considered here and that the urea, which is so often retained in Bright's

disease, accumulates principally in the blood.

Then Strauss noticed that the edema disappeared upon the occurrence of polyuria, and above all when polychloruria set in, whence he came to the conclusion that in this class of diseases the ingestion of salt must be limited and means adopted to promote its excretion. To effect the limited ingestion of sodium chloride he recommended the milk diet, while for its increased excretion he proposed diuretic medicaments.

Widal and Javal were the first to publish the results of a chloride-withdrawal cure, and they established the fact that even milk as a nutriment contained still too much sodium chloride. They then for the first time encountered the surprising fact that meat and other articles of food, which, unsalted, hitherto were considered harmful, acted very favorably. In some cases, however, milk gave better results. But when milk is used indiscriminately, it may happen in certain cases that a diet is prescribed which contains too much water and salt, besides a harmful percentage of albuminous bodies. The necessary minimum quantity of milk contains almost four times as much chlorine as does a mixed diet without an artificial addition of salt, while in addition the milk represents about 3 quarts of water and 4 ounces of albumin, quantities more than many nephritic patients can bear.

The formation of the edema has two stages, first, deep invisible infiltration, and, second, the visible subcutaneous edema. The deep infiltration can be ascertained only by the use of scales; the fact is, the weight of a nephritic patient must be regularly observed. The density of the renal tissue relative to that of sodium chloride is a variable one, for in one and the same patient it may vary in the different stages of the disease.

The chlorine-withdrawal cure aims at two things, viz., (1) to remove the retained salt from the organism and thus get rid of the edema, and (2) to order a diet the chloride of sodium of which is within the power of the kidneys to excrete. By observing the weight of the body and the balance of the amount of salt (ingested and excreted), the dose-limit of salt can be ascertained, and this limit should never be fully reached in the ration. The amount of ingested salt is very easily ascertained, for when the patient is on a milk diet we start from the premise that the milk contains 1.6 Grams of sodium chloride per liter, while when on a mixed diet, we may assume about 1.5 Grams daily is taken in.

Occasionally the diet does not give the desired results because the withdrawal of chlorine offers some difficulties. In a certain class of patients we reach the desired goal very slowly and are obliged to supplement our regimen with diuretics. When the edemas of the body have disappeared and the weight has remained stationary for some days, then the patient's kidneys may be tested as to how much salt may rightly be added to his diet.

The speaker showed that renal insufficiency in patients with Bright's disease does not pertain to the excretion of salt alone, but may extend to that of albuminous products as well. Hence there are two distinct types of Bright's disease. Nitrogen and sodium chloride are often retained in the kidney at the same time, especially in the final stages of the disease.

The two forms of retention of nitrogen and of sodium chloride, in Bright's disease, differ essentially. Urea accumulates in the blood, but the sodium chloride passes readily from the blood into the tissues of the body. Hence we see salt retention terminating with hydropic uremia, while nitrogen retention ends in uremia without edema. In nephritic patients suffering from extreme salt retention there may be only a minimum of urea in their blood, varying, say, between 0.2 and 0.5 Grams (3 and 7.5 grains) per liter. If such an amount is found, then it is a sure sign of the existence of salt retention.

When the blood contains more than one Gram of urea per liter, then we have before us a patient suffering from retention of urea. And if the urea rises to 3 and 4 Grams (an amount observed only in the end-periods of the disease), then the prognosis is most serious.

We very well know how difficult it is to make a prognosis in certain uremic conditions. Some patients with vomiting and eclamptic symptoms, or with edema, may sometimes improve very rapidly, while others with somnolence and anorexia suddenly lapse into a fatal coma. It is in such cases that the determination of the amount of urea in the blood can assure us of the diagnosis and prognosis as to whether we are dealing with retention of salt or of urea. When the blood contains a normal amount of urea—and this means the same as saying that we here have to do with chlorine retention—then we may expect the best results from the salt-withdrawal treatment, despite the presence of edema and other serious symptoms.

It is to be hoped that these examination methods will become a settled practice in the profession. In nitrogen retention the consumption of nutriment must be curtailed.

In the chlorine-withdrawal treatment no salt must be added to the food, not even to the bread. But from 22 to 30 grains of common salt may be weighed out to the patient daily along with his food. The withdrawal otherwise is harmless since the unsalted foods in themselves contain salts sufficient for the demands of the organism. Nephritic patients who for months were kept in such an equilibrium with only 30 grains of common salt showed no disturbance. Those of this class in whom edema has not yet developed should take as little salted food as possible with their diet, for it can not be known when at any time the ingestion of the chloride may become injurious.

[In connection with these remarks of Widal, THE GLEANER wishes to call the attention of those of his readers who understand French to an excellent little monograph by Widal and Javal, entitled "La Cure de Dechloruration." It is published by Bailliere et Fils, Paris, and sells for 1½ francs, or about 30 cents.]

Prof. Strauss of Berlin remarked that "he used the chlorine-withdrawal treatment long before Widal demanded and established it in the treatment and prophylaxis of nephritic edema." He recommends a trial of this diet in parenchymatous nephritis where hypochloric renal torpor is not manifest. It is also to be remembered that along with tissue-retention we also have a serum-retention without hydropsies, as forerunners of the latter.

Strauss stated that he and Mass found that an abundant ingestion of salt increases enormously the capacity for fluid absorption and is of great influence in the formation of dropsies. The phosphoric- and sulphuric-acid salts exhibit in the question of retention a difference from that of common salt. He found that, after injections of sodium chloride into a frog, the epithelia of the frog's skin could excrete sodium chloride at least (but not other salts). In regard to the retention of sodium chloride, cardiac and renal patients are not to be identified indiscriminately. It is only in severe cardiac disturbances of compensation that the situations become similar.—*Wiener Medizinische Wochenschrift*, 1909, No. 31.

CARBON-DIOXIDE SNOW IN DERMATOLOGY

Dr. Strauss of Barmen (Germany) writes, in *Monatshefte fuer Praktische Dermatology* (Band 47, No. 7), as follows: Carbon-dioxide snow is obtained by fastening the neck of a buckskin bag over the discharging cock of a filled carbonic-acid tank and opening the cock. The snow that forms in the bag can be shaped with the hands into discs and placed with a glass spatula over the skin-area to be treated and gently pressed. As soon as the snow adheres to the skin it appears as a frozen mass and the patient feels a sense of cold. If the snow is pressed on too hard, freezing of the tissues to the depth of from 3 to 5 millimeters may occur. When the snow has melted, a pricking sensation is felt, but this will disappear in a short time. After that, redness of the skin and raised wheals will occur. If the application of the snow continues ten seconds, a crust is formed; if it lasts thirty seconds, a

blister results without any cicatrix following it; after thirty up to sixty seconds a blister forms, with subsequent cicatrix.

It is best to let the snow act for from ten to thirty seconds as in this way no cicatrix ensues. The next application should be made when the reaction after the preceding application has ceased, while during the interval the spot should be covered with a zinc paste.

Cures were effected with this treatment in pigmentous and vascular moles, in warts (after ten to twenty minutes), in keratose formations, and in the flat dermic cancer of the aged. But no good results were observed from its use in spotted and corroding herpes.—*Pharmazeutische Centralhalle*, 1909, p. 572.

PHYSIOLOGIC EFFECT OF CAFFEINE

Experiments on dogs, rabbits, and cats made by Dr. K. Botticher of Munich revealed the following facts: An infusion of coffee acts quite differently from a solution of caffeine. An infusion of caffeine-freed coffee acts much like ordinary coffee. Very slight and secondary differences are to be ascribed to an incomplete removal of the caffeine, and also to traces of some as yet chemically unknown alkaloid. As to the serious toxicity of coffee, it is nearly identical with that of caffeine-freed coffee. The toxicity of coffee is due, not to its content of caffeine, but to some as yet chemically unknown substance, which would seem to be two alkaloids.

How far the products of roasting of coffee, after which these alkaloids are found, alter the effects, further investigations will have to show.—*Allgemeine Med. Centralzeitung*.

HYSTERICAL FEVER

M. Soca of Montevideo has investigated the question as to what is produced by suggestion and that which is due to intercurrent infection, and after extensive study of the subject in medical literature has come to the conclusion that we must keep ourselves in an inquiring state of mind in regard to certain reported cases. Thus Lombroso reports a case in which the temperature was repeatedly taken simultaneously in both armpits and where the thermometer registered 45° in one and 48° C. (113° and 118° F.) in the other. Another case was one of lethargy where hyperthermia was proven constant.

The author also relates a case of his own observation where a high local hyperthermia did not show the least sign of general fever and which could not be traced to simulation. M. Raymond verified important variations of local temperature in patients affected with paralysis or with hysterical contractures.—*Gazette des Hopitaux*, 1909, p. 8.

[THE GLEANER is reminded by the foregoing of a case which he witnessed, in the sixties of last century, in the late Prof. Skoda's clinical ward, in the Wiener Allgemeines Krankenhaus. Skoda was then lecturing on pneumonia and a number of us postgraduates followed him from bed to bed and finally came to one the occupant of which was a young girl with flushed cheeks, short, heavy breathing, and in a semicomatose condition. The patient had come into the ward the night before, being sent there by the receiving medical officer because he knew that Skoda was then lecturing on pneumonia. Skoda examined the patient, auscultated and percussed, and so did a number of us, and no one had any doubt but that it was a case of pneumonia in the first stage.

As to the treatment of this case I remember Skoda saying, pointing to the other pneumonia patients: "That one we will give small doses of tartar emetic, and that one some Dover's powder, and this one we will give an infusion of althea, *es bleibt sich ganz egal*," meaning, It is all the same.

The next morning, on revisiting the clinic, the girl was out of bed and requested to be discharged. The case proved to be a chapter in the history of hysteria.]

The Business Side of Medical Practice

The author of this article has had a post-graduate course in the "school of hard knocks" which peculiarly fits him to discuss this subject, He has been a school teacher, detail man and physician. He knows the doctor and his difficulties. It is thought best that his articles (of which this is the first) shall appear anonymously

THE United States of America is a nation in which class distinction, commonly called caste, is even yet but little known. The Almighty Dollar, it is said, is making an aristocracy of wealth, and the rapid kaleidoscopic change in methods of production is rapidly placing the people in two great divisions, the Workers and the Idlers. The Workers are many and poor, or more or less likely to hear "the wolf at the door." The nonproducers are fewer in numbers, yet make a goodly total. It takes quite a few Workers to produce enough to keep one Idler contented—the style of automobiles change so rapidly. But all this is another story—I am not writing it.

To care for the whole people of the nation we have in the United States two or three hundred thousand doctors: old and young, good, bad and indifferent. Reliable directories list about 150,000, and the Lord only knows how many O.D.'s, D.D.'s, bone-setters, faith and mind healers, etc., there are making or trying to make a living by attending to the ills of the American people. To these add thousands of druggists in towns large and small who recommend "something good" for almost everything. Then, so successful are the nostrum makers, the people buy and consume more than $62,000,000 worth of "patent medicines' every year—enough to give every doctor about $2,000 additional yearly income.

How the Doctor Is Eliminating Himself

In the larger cities are the health boards, sanitary corps, the district physicians, the visiting nurses, the shop doctors, the hospitals with their internes and externes, free dispensaries and clinics. The large industries are rapidly organizing their own hospitals, and even the trades unions, of miners and others, are building and conducting their own institutions. The insurance companies are dipping into the business of caring for their sick and injured policy holders, and some lodges are offering free doctors and free medicines to their membership. Medicine is the only profession that tends to eliminate itself. The more good sanitation we secure, the more good health-habits we teach, the more anti-tubercular crusades we wage, the less need has the public for the doctor. We are also training and graduating about 4,000 new men, better-trained men, every year, and medical colleges are organized in towns where no need or excuse exists, except that a circle of local doctors like to teach and are proud to be "professors" of this and that, perhaps for local self-glory.

We are not to bewail the fact that all these conditions make it harder and harder each year for the average doctor to earn a living. We are not to grumble because competition is keen; because the public does not recognize what we call the "professional dignity of our sacred calling" and pay us only when "good and ready," so that on the whole doctors collect but one-half their charges.

What are we to do?

Shall We Twist Our Ethics a Bit?

Are we to wear our professional halos, put on our ethical cloaks and assemble with the guild to applaud the well-read, well-prepared, helpful paper by the great Doctor So-and-So, when we really fall short in dollars and cents to pay our expenses and to live decently?

Here are a few ways that come to my knowledge whereby the income may be helped out and this question answered:

Some of the good surgeons will turn over half the fees from cases we refer to them. If you twist your ethics a little it will seem all right.

Some specialists, also, will pay a commission on cases you send to them. Give your ethics another twist.

Some druggists will pay a commission on prescriptions. You can steer your patients to the right one by a remark to the effect that "he has just the right drugs to make it up," but you "do not know about the others."

If you do refractive work you may fix up a code of marks with the manufacturing optician, so that by charging for the glasses what your marks indicate, once a month you can get a nice check. An optician told me he had such a code with one oculist who is always active in the Eye Section of the A. M. A.

But in all this there is some risk and you have to twist your ethics so much that the original meaning of the code is hardly recognizable.

Now, I am told of a safer way practised by many good "ethical" doctors. Don't rant and say I am drawing upon imagination for these illustrations of how doctors make a living from an average of 700 population each throughout the United States and in cities of about 500 to each, or, say, 100 families. In Denver, Los Angeles and other places where many doctors are attracted for health and climate the average is lower yet.

This safer way I am told of is practised by many who scorn being called "case-takers" in the advertising doctor's sense. They would resent being called bamboozlers. They glory in being thought ethical and they love to sit among the elect at the medical-society meetings.

Here is the plan: When the patient comes to you be chary about diagnostic statements made to him. Take your cue from how the patient feels about his case. If it is urticaria, don't call it "hives." Talk a long list of words ending with "auto-toxemia," which sounds more serious than "hives." When you have made the proper psychological impression, then take the case for a course of treatment, say to cure for $25.00, and collect it all or part down. Always suit the treatment and the price to the patient's purse.

If the woman suffers from endometritis, thinking of the fee, always curet if you can; but if you do no surgery or if she is too poor to pay a fee, then use the tampon, and keep her coming two or three times a week for treatment. Have a ready line of talk to give, and by a good deal of suggestive therapeutics you will make her admit that she is getting steady improvement under your care. If you do surgery you will have a greater opportunity to apply the principles of bamboozle than if you do not.

I have said enough to illustrate to what straits many doctors are put by the present business conditions of medical practice, and enough to show how much I condemn all this graft and flim-flam, whether the doctor is "ethical" or "unethical." When put to the test under the ethics of the Golden Rule, as taught by Jesus the Carpenter's Son, it is all unethical.

I am writing for the average doctor. What I have to say will be pooh-poohed by the

punctilious, and sanctimonious elect of the organized circles, who control hospitals, colleges, health boards, examining boards, etc., in order to hold the best-paying practices. These little cliques in every center prate about organization, protective legislation, etc., yet their everyday work is a game of freeze-out for the average doctor; and their dicta come as autocratically as the ukase of the Czar. They are medical politicians, pure and simple.

In these papers I shall urge that ambitious self-improvement, self-education, professional courage and competency, that thoroughness as a doctor and as a businessman, which will enable you to do much of the work of the specialist or the surgeon yourself, eliminating all necessity of being anything but an honest man and a competent all-around doctor. This will enable you to stand alone, fearless because you are right, independent because you will have the income necessary for all your needs, and self-esteem because the people will recognize you and stand by you.

Counting the doctor as a business man of first importance, my next chapter will deal with the financial phase of our work.

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[For excellent reasons it has been thought best that this series of articles shall appear anonymously. Whatever their virtues or their defects, we are sure of one thing, that they will set men to thinking. With much that the author has to say in future articles we are sure many of our readers will disagree, indeed we ourselves disagree with him. But is that a good reason why we should refuse him a hearing? We think not. Indeed, these points of difference should be brought out and discussed frankly by the profession with the principal aim of getting at the truth, without reference to our own preconceived opinions.

There is no question of such intense interest to the medical profession at the present time as "the business side." This concerns every one of us, from the richest to the poorest, though naturally the men of the struggling mass the most; their position, as a result of the multiplication of the quack and faddist, the growth of specialism, the enormous inroads of the hospital and dispensary, is becoming more difficult every day.

Is the doctor (i. e., the average fellow) getting his share? If not, how is he to get it? Those are questions that we want answered. And yet they are questions that our great medical organizations seem to fear to grapple with, it is charged by some because many of our professional leaders are interested in the perpetuity of a system which is rapidly making the rank and file the local agents to drum up trade for the pushing and prosperous few.

What is the remedy? Let us endeavor to find one. The columns of CLINICAL MEDICINE are open for the discussion of these papers—only be concise.—ED.]

CHEER UP!

I have little use for a grumbler, always feel like shaking a whiner, and would add one more level to the traditional seven-cellared Hades, for the especial final resting place of the pessimist. If there is a being who has utterly failed to appreciate himself and the world it is the discontented man.

Why should a body be discontented? Have we done the very best of which we were capable? Have we improved our chances to the utmost? If so, we then have won all the good to which we are entitled, and why not rest satisfied with that? If we haven't done our best, what failures we scored have been our own fault, and why blame others? But is this any reason for moping or destroying what happiness we might enjoy, by self-depreciation and endless remorse? You haven't done your best, hey? Just let me whisper in your ear—neither have I! Nor did ever man live who could not with entire truthfulness repeat the litany—"I have done the things I should not have done, and left undone the things I should have done!" (Wording not vouched for—it's been a good while "since.")

You and I and every man are each entitled to our full share of happiness. Don't

bother about the past—it *is* past—but just think what you can do to extract the very greatest amount of pleasure out of this very day.

I know what pleases me. I get up at 4 a. m., have my cold plunge and a wee cuplet of hot coffee, maybe a melon or a peach, go to the office and do a full day's good work before noon rings. Then home to lunch, and off shopping with wife if the weather permits, or if too warm get off superfluous drygoods and loll about with a book, tease the kid, jump into a car and off for a trolley ride, or to one of the parks to see the flowers, or down to the bathing beach. In the evening, music; in park, garden or home. To bed at 8:30, and sound sleep comes the moment my head touches the pillow. Health comes from moderate eating, from careful attention to digestion, plenty of exercise, hard work in worktime, all play in playtime, and never work unless so fit that it is a pleasure to work. Any evidence of strain, lagging brain or weary hand, poor quality of mental output, means a vacation; back to nature, with hard physical labor till the poison has been worked out and one feels hungry for the desk.

Put out from your soul those evil spirits, hatred, envy, malice and discontent. Surround yourself only with happy folks—and you do this by seeking to make everybody within your reach happy. Make this your most serious study. Never mind yourself—you're of very little account anyhow; but just cogitate over what you can do to make somebody else brighter and better.

It's a gay world.

It's a beautiful world—couldn't be more so.

It's a good world—could not be better.

It's a mighty well-constructed world—couldn't be improved.

The Russians are unhappy yet—but just see how much better off they are when they rouse themselves enough to get away and come here; and they've *got to* arouse.

The Greeks are degenerated—well, yesterday one of them sold me a bad pineapple—ha! ha! Where are *my* brains!

If you can't laugh with me, you can laugh at me—but laugh you must.

W. F. WAUGH

Chicago, Ill.

STUDY IN BRONZE

The missionary doctor is in a position to appreciate the value of medicines and modern medical treatment of disease, because in many cases he is isolated from the busy commercial world and thrown upon the resources of his own experience. He is at all times also a student and investigates new ideas and drugs, and can impartially accept or reject whatever the results may dictate.

Guatemala is the most beautiful country on the American continent, and a great diversity of climates is met with. Nature has done her best here; and from the low-lying coast regions, where bananas grow and the festive mosquito inoculates man with malaria and other disagreeable things, to the high mountainous districts of the center the view is one continuous kaleidoscope of delights.

From ancient times Guatemala has been the theater of stirring events. The great and noble Quiché nation, coming down from Mexico, brought into the land the art of building great cities and also that of war. The sun was worshipped and human sacrifices were daily offered to the heavenly orb which proclaimed the power of an Unknown God. Colleges flourished and the ancient Indians obtained a remarkable knowledge of useful arts. Time passed, and strange beings appeared upon the scene. A horde of savage men, mounted upon horses and carrying arms that vomited fire entered the "Land of the Quetzal," the beautiful bird of freedom. The Quichés rallied to the defense of their liberties around their venerated king. Battle after battle was fought, and finally the king fell with a hundred wounds. The beautiful cities were destroyed one by one; the most valiant defenders of their land were put to the sword, the invocations to the national gods were drowned by the chants of monks, and the religion of the Spanish

conquerors was, after long and arduous labor, forced upon the people. Temples were erected in the cities and towns.

Time passed; the power of Spain was overthrown in the year 1821 and a republic proclaimed. But the clerical party could not appreciate partial power; they sighed for

Dr. Secord's Mission

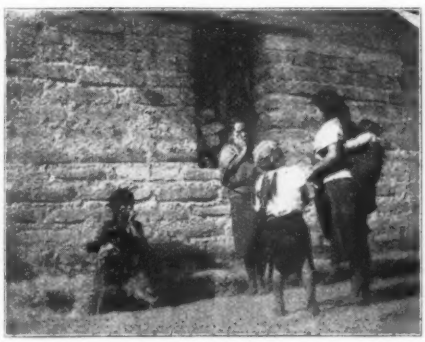
absolute authority, and soon dominated the situation. But the spirit of the times was rapidly changing, and from the common people God raised up a man—Rufino Barrios. The people gathered to his standard, and the love of liberty urged the army of the Reformation to prodigious feats.

Again time marched on. The Jesuits were expelled from Guatemala and the country entered an era of liberty and progress. But the grand old man, General Barrios, was killed in battle, fighting for the union of Central America, and new difficulties began to arise. Two presidents were unable to control the situation. But the vice-president, a brilliant young lawyer, representing the best spirit of "the Land of the Quetzal," was the man of the hour. Notice being given him of the president's death, he threw himself at his beloved mother's feet for her blessing and at once took the reins of power, subjugating the anarchical hordes of political unrest, and after almost superhuman efforts has slowly guided Guatemala in paths of peace, liberty and progress. This young man is now 51 years of age, and while the great difficulties contended with and the numerous attempts upon his life have silvered his hair, his indomitable spirit has wrought wonders in Guatemala.

President Manuel Estrada Cabrera is generally loved in the country, but considering the naturally restless spirit of the people and the proverbial intrigues of the clergy he cannot but have enemies who attempt to obstruct the march of progress.

Good roads to all parts have been made, a fine public-school system established, railroads, telegraph, telephone, mails, etc., are remarkable and force admiration. There are many fine hospitals and charity asylums. True religious liberty is not a mere theory but a fact, and foreign interests are protected and helped.

For some months an epidemic of smallpox has raged in the country, but the remarkable wisdom and activity of President Cabrera at once devised a system of universal vaccination, disinfection, etc., and while deaths were at first numerous, the plague is now passing. The difficulty of vaccinating in a land where



A group of Guatemalan natives

three-fourths of the inhabitants are pure Indians is great, but it has been done. Here in this district, assisted by my wife, I vaccinated 12,500. The Indians manifest confidence because they love the President and

know and appreciate our work here among them.

Among the other important things to the credit of the present enlightened government of Guatemala I will mention the printing of fine charts, in colors, showing the evil effects of alcohol on the human body and presenting scientific arguments against this, the greatest curse of Guatemala. No other Central American government has done so much. Besides, the press of the country also co-

A Guatemala Belle

operates from deep moral conviction of the justice of the cause.

I consider Guatemala the most beautiful progressive and interesting country among the smaller republics of the earth, and will give varied experiences from time to time.

During the vaccination we had a magnificent opportunity to study the Indians and find them naturally healthy and clean. There are numerous types of beauty among them, and as a rule their arms are perfect specimens of the Great Sculptor's work, and would fill with joy the modern bronze-artists if they had access to such fine specimens.

CARLOS F. SECORD.

Chichicastenango, Guatemala, C. A.

HOW I TREATED MY SECOND SUCCESSFUL CASE OF TETANUS

Double sulphide (Burgess), gr. 1, every hour; veratrine in small doses until sweating. Echinacea and nuclein in full doses every three hours. Hyoscyamine, gr. 1-250, one-half hourly to control spasms. Epsom-salt solution hot-pack to wound.

The patient was my daughter. A friend who was sick at the same time was taken to a hospital in Washington, treated with serum and died, with three abscesses at points of injection, thus adding blood poison to the disease. I cannot too strongly condemn the present fad of serum therapy.

GEO. ROBERTS.

Lincoln, Va.

[Echinacea, nuclein and the sulphide—we prefer to use calcium sulphide—with appropriate and prompt treatment of the wound, are the remedies for septic conditions, tetanus included. The wound should of course be fully opened, so that there may be access of air to every part of it. Hyoscine-morphine combinations to control the spasms.—ED.]

TREATING TETANUS

When I inform my readers that up to the present my treatment of tetanus has been limited they will doubtless wonder what excuse I can give for venturing to write upon the subject. This I will answer by saying that during the twenty-five years in which I have been engaged in the practice of medicine I have constantly gleaned from the medical journals and textbooks and stored safely by in a fireproof safe voluminous notes and clippings from the writings of other physicians. The result is that there is scarcely a disease for the treatment of which my notebooks do not offer numerous suggestions, many of which are invaluable.

From an article published by Dr. Geo. R. Livermore of Memphis, Tenn., regarding the use of antitetanic serum the following is of interest:

"I feel certain that the inability to cure more of these chronic cases and a certain percent of the acute ones is due largely to the failure to use sufficient quantity of the antitetanic serum. As antitetanic serum is absolutely harmless there is no excuse for giving a small dose. Twenty Cc. may be given every four hours even to a child. Give a sufficient quantity to get the desired result, and when you have the disease under control give enough to keep it so."

Dr. Livermore reports a case of a negro aged 35. His symptoms began about two weeks after the injury. During fifteen days the doctor made thirty-six injections of 10 Cc. each, and four of 20 Cc., making a total of 440 Cc. The patient recovered without any harmful results from the serum. The article closes with three suggestions, viz.: "(1) Give the serum early. (2) Give it frequently. (3) Give it in large doses." Two cases were reported. Both recovered.

My friend, Dr. A. H. FaBrigue of Wichita, Kans., writes that he has treated twenty-five cases and has seen but one well-developed case recover. This he treated as follows: The patient, aged 9 years, developed the first symptoms about nine days after the slight injury and when brought to the hospital had become a fully developed case. The doctor says:

"The Baccelli carbolic-acid treatment was determined upon. Thirty drops of a 2-percent solution of carbolic acid (pure) was administered hypodermically every eight hours for the first twenty-four hours. The dose was increased to 75 drops every four hours on the second day, and to 100 drops every four hours the third day. Morphine, 1-8 grain, was given once or twice a day during the first four days, to induce sleep. On the third day after beginning the treatment all symptoms showed a marked improvement. The convulsions became generally less severe. On the tenth day they did not occur unless the patient was moved suddenly or some unusual noise was made. The urine was carefully watched but it never indicated any pathological condition of the kidneys. After the tenth day no medicines were administered. The improvement was gradual but uninterrupted and recovery became complete.

"The happy results obtained in this case have established my faith in the carbolic-acid treatment of Baccelli, which, according to Sajous, overcomes the depressing effects of the tetanic toxins upon the anterior pituitary bodies. To me Baccelli's discovery is one of the greatest medical discoveries of the decade; and the explanation of Sajous raises the empirical method to a satisfactory scientific basis."

Among my records I find also the following: "Echinacea has been recommended as a cure for tetanus. Dr. John Herring of Eau Claire, Mich., reports thirty cases of this disease in which he claims to have successfully used the remedy, while Dr. Lewis of Momence, Ill., reports three such cases."

On the Fourth of July, this year, a boy came to my office with a wound in the hand made by a toy pistol in which he had put a small bullet. The wound was rather large and ragged. The bullet I could not find for a couple of days, when it became apparent under the skin on the back of the hand and I cut it out. I thoroughly disinfected the wound with a 20-percent carbolic-acid solution, after which I injected into it pure fluid extract of echinacea and prescribed 15 drops of the same every two hours. The wound was kept open by a tent and twice daily for two weeks was washed out and the echinacea injected. This I did, not to cure a case of tetanus, but to prevent one, and the boy made a nice recovery.

In adjoining cities several cases like the foregoing proved fatal from lockjaw from wounds received the same way, and in which no special care had been taken to prevent the disease. Prevention is better than cure.

Echinacea is an excellent remedy for all kinds of infection, also for snakebite. I have records of several hundreds of cases of cures from snakebite. Those who have used it most say it is a specific. It is used both locally and internally, and since the

remedy is not toxic it can be used without fear, in all infective conditions.

No one can read without interest the article appearing in the July number of THE CLINIC (page 821), written by Dr. Sterman. The latter claims, and seems to prove it, that the convulsions of tetanus are caused by pressure of gas upon the brain and that by puncturing the membranes of the brain through the skull and allowing the gas to escape the patient is thereby relieved and cured. He states that for sixty years past veterinary surgeons have saved horses in this way. A gimlet is used for the horse.

V. E. LAWRENCE.

Ottawa, Kan.

BUSINESS PARTNERSHIP IN THE MEDICAL PROFESSION

Readers of CLINICAL MEDICINE will recall the articles on "Medical Partnerships," by Dr. G. G. Burdick and others, which have appeared in these columns. An abstract, appearing in *The Journal of the American Medical Association* of June 17 is germane, and we reproduce it below:

In a recent number of *The Boston Medical and Surgical Journal*, Dr. G. C. Shattuck of Boston, in some interesting "Random Medical Notes of Travel," makes reference to the practice common in China among physicians, of associating themselves in partnership—usually one physician, one surgeon, and one or more specialists. In Shanghai and Hong Kong, practically all English physicians are thus associated. In an association of four, each would thus be given the opportunity once in four years of going on vacation, and at the same time of strengthening his professional weak points and gaining new ideas. The others divide the work of the absentee so that his practice is not lost and he receives his share of the profits from the firm.

The fees charged in Shanghai are so much a year for every member of a family without regard to the numer of calls made. The only extra charges are for operations. The patient may choose any physician he wants, and having chosen, may call the other members of the firm either in consultation or when his own medical attendant is away. The physician is responsible for his patients under all circumstances. It does not matter what may be needed or what difficult operation may be required, he must perform it to the best of his ability himself.

From the patient's point of view the system is a success because a medical man can be found at any time, and because in case of sickness doctor's bills do not increase. The physicians like it because they get an assured income, and because it enables them to take vacations without losing their practice. Very good all-round men are developed by this system, but it must sometimes happen that a physician is called on to do work for which he is not fitted. This difficulty is obviated to some extent by the fact that most Shanghai people go to England every few years, and while there have their eyes examined and can have operations performed if necessary.

In Hong Kong, as in Shanghai, the profits of physicians' firms are divided, but fees are charged for every visit instead of for the year's attendance, and an attempt is made to divide the different kinds of practice among the members of a firm, instead of insisting that every man shall do everything. Specialism had not appeared in Shanghai at all when Shattuck was there, but he thinks it is beginning to come in outside the firms at Hong Kong. However well the firm system may work in small communities, he thinks that if the foreign cities continue to grow, it must break down or limit its scope before long in China. In that case the general practitioners would be able to make a living without undertaking everything, and they would probably part willingly with some of the responsibilities which rest on them under the old system. Shattuck thinks that in a city where there are already nine or ten recognized specialists, and where medicine and surgery are being still further subdivided, the practical difficulties of managing a firm to undertake all kinds of practice would be prohibitive.

HEMORRHAGE—AND ATROPINE

One very rainy, stormy night, about 4 a. m., I was called up to prescribe for a patient who had hemorrhage from extracting teeth. The wife had come nearly two miles through the darkness and storm, with only a collie dog as companion, that she might get something to stop the blood. The teeth had been taken out, four or five of them, two days before and the dentist had exhausted his skill in trying to stop the flow of blood. The hemorrhage persisted in spite of all that had been done and she feared that her husband would die.

I gave her half a dozen atropine tablets, 1-50 grain each, with instructions to let one at a time dissolve under the tongue and to stop giving them if his throat got very dry or the bleeding ceased, these tablet doses to be repeated every fifteen minutes. I also gave her some tannic acid with instructions to fill the mouth with it and "bite down hard"—this to be used after two tablets had been given. Directions were followed, only a few tablets were used, the bleeding was controlled and the patient was asleep before daylight.

A boy with hemorrhage from urethra—result of ill-treated gonorrhea two years before—states that he has had one bad time before with this. Is much frightened. Gave him atropine, gr. 1-250, also ergotin, gr. 1-6; alternate every fifteen minutes till better. Called next day—only a few tablets used—hemorrhage controlled.

Twice afterward I was called at intervals of six months to find the same condition and to relieve it in the same way.

Young woman suffers from dysmenorrhea. Nearly goes into convulsion when attack comes on; is ice-cold, bloodless, covered with sweat drops and throws herself on the floor. Is usually twelve to twenty-four hours in agony and nearly a week in recovering. I gave her 1-250 grain of hyoscyamine, telling her to chew the granule, and repeat in ten minutes till four are taken. In a glass of water I mix 10 drops of tincture of pulsatilla, one teaspoonful to be taken every fifteen minutes till better.

Pain over in half an hour. Patient about her work next day. She has taken nothing but this for now several years, and is happy.

C. S. COPE.

Ionia, Mich.

"GREAT TO BE AN ADVOCATE OF ALKALOIDAL PRINCIPLES"

It is profitable and refreshing to every doctor to share the benefits accruing to every reader of THE AMERICAN JOURNAL OF CLINICAL MEDICINE. Joseph Addison has said something like this, that "the medical profession is a body of affable gentlemen whose chief employment seems to be in antagonizing one another." However that may be today, as a sort of pathology it would demand a very different line of therapeutic management from alkaloidal medication.

It is great to be an advocate and user of alkaloidal principles. By neither of three things should the doctor's life be ruled: by ignorance, by prejudice, by fear. If only all were actuated by this: "All things whatsoever ye would that men should do unto you, do ye also unto them." As a code of medical ethics such a practice can have no superior.

Dr. Henry Gregory, Laurel, Ind.

The editorial department asked me to write on some therapeutic subject I felt an interest in, but surely every one of these subjects is so ably presented herein from time to time that I prefer to read, think, digest and apply.

HENRY GREGORY.

Laurel, Ind.

FORCEPS OR NO FORCEPS

The practice of obstetrics is looked upon by the average practician as simply a part of his regular routine. When called upon he can loaf around, pass jokes with the neighbors, go to bed and catch up some lost sleep and "let nature take her course," and finally pocket twenty-five dollars of easy money.

Such a man should not be permitted to attend a confined woman. God knows women suffer enough, one way and another, and the physician should make it his business to find some way to relieve some of the pains of child-labor, at least.

I do a large obstetric practice and I almost invariably use forceps, and the reason I have that practice is *because* I use

forceps and chloroform. Now, do not jump to the conclusion that I chloroform the patient and drag the infant away by main strength, for I don't.

A little chloroform always does good—and more when it is needed. The forceps I use to assist baby along and save the mother more or less hours of needless and exhausting suffering and labor.

I think that one reason forceps are looked upon in some localities as an undesirable implement is, that as soon as the operator "gets a bite" he cannot rest easy until he yanks that baby into the world. Do not get nervous; take your time. When the

Dr. W. S. Gibson, Los Angeles, Cal.

instrument is properly placed take more time. Encourage the mother to bear down and assist with the forceps judiciously.

As to tearing, as Dr. Young says, you will have it with instruments and you will have it without them. My own experience has been to have less tearing with forceps than without them.

With the instruments on the child's head as is comes up to the perineum the operator has absolute control of the situation and the head should always be delivered during the interval of pain.

As to position, if it is a low operation (and it usually is) let the patient lie in the bed as usual with the Kelly pad properly placed and apply the instruments under the sheet, making no talk, fuss or spread. Act as though it were a simple everyday affair, and the patient will thank you and the friends will swear by you—which is a nice thing for the doctor. If the operation is a high one the patient's hips will have to come to the edge of the bed in order to get the proper angle with the forceps.

W. S. GIBSON.

Los Angeles, Cal.

THE TREATMENT OF LUMBAGO

I wish to offer a little clinical note that I believe to be of value.

There is a variety of lumbago in which the patient is suddenly taken with excruciating pain in the back, of such severity as to produce instant and complete disability. We are all familiar with this disease. Various remedies have been used, such an array of them, in fact, that I only wish to mention the hypodermic use of morphine and the usual exhibition of the salicylates. I refer to them only to call to mind the harm they usually do.

For the past four years my treatment has been as follows: There are prescribed at the first visit the usual remedies for the sake of getting a "clean deck." At the same time iodized calcium is given as follows: Three 1-3-grain tablets every 15 minutes. They are dissolved in a teaspoonful of very hot water and washed down with a sip of very hot water. This is continued for from three to six hours, depending upon the conditions relative to each case. The interval is then lengthened until at the end of 24 hours there are being taken three tablets every hour. Usually by that time they are not dissolved and cold water is used to wash them down. About 150 tablets are usually dispensed at the first visit. At the same time there is placed on the painful back a *big* hot-pack of a saturated solution of epsom salt.

It is well known that these patients are often disabled for weeks and remedies seem at times to do all too little. Potassium iodide is said to be the slowest yet the surest rem-

edy used in the treatment of lumbago. Bearing that fact in mind, for I had often used it to good effect, I decided that if potassium iodide were of benefit, iodized calcium ought to cure the condition at once, if rightly used. The results are very good indeed. In 24 hours the pain is much relieved and in two days the patient is usually able to resume work. I have tried it out very fairly in about 20 cases. It seems to me now that it is about time for someone else to try it and let us know what happens.

My theory as to how the benefit accrues in this method is very clear. Simply that iodine is the proper remedy and that it is introduced into the diseased tissues easiest and quickest by the administration of iodized calcium.

JAS. H. BRISTOW.

Portland, Ore.

[Dr. Bristow's observation is interesting and important. The malady is painful; the use of opiates doubly perilous, for lumbago has made many a drug-fiend. I trust our friends will give his treatment a full trial, distinguishing between acute, subacute, chronic and chronic-with-intercurrent-acute attacks.—ED.]

WHAT IS A DIAGNOSIS?

"It is not ignorance alone that hurts us so much as it is a disposition to make our work too mechanical or automatic. As our experience grows, we learn, often too late, that every case is to be considered by itself, and not one of a class that can all be treated alike because they have some symptom in common. Diagnosis consists more in the separation of symptoms, rather than massing them in order to discover a symptom-complex, i. e., a disease. The diagnosis once established, the therapeutics of all curable diseases becomes comparatively easy."—C. F. Wahrer, in *The American Journal of Dermatology*.

This paragraph is so eternally true that we wish that it might be printed in large type, properly framed and hung directly over the desk of every physician in America. If medical men could only get away from the deadly automatism of textbook thinking and follow-the-leader practice their possibilities for cure would be increased almost beyond belief.

ATKINSON'S "FUNCTIONAL DIAGNOSIS"

It is certainly true that great minds run in the same channel. While we have been preaching the doctrines of clinical study and fitting remedies to the aberration from normal physiologic function detected by such study, Dr. Thomas G. Atkinson has gone much further, and has made an application of physiology and diagnosis in his new book. This is entitled, "Functional Diagnosis." It deals with diagnosis from the viewpoint of function, that is, it starts, as the clinician does, in the sickroom with the patient, and from the disorder of function which is noted therein Dr. Atkinson works up to his diagnosis. It supplies a missing link between physiology and pathology, and interprets the symptoms of functional traversion from the standpoint of normal physiology. It is exactly the book on diagnosis I would place in the hands of the student, or a beginner, and I know of no old practician who would not be benefited by a study of this book. One who appreciates it would probably become a physician in the course of a year or so.

The price is $1.50. The book has about two hundred pages and is bound in manual size with a cloth cover. It is published by the New Medical Publishing Company, La Grange, Ill. Send for it, Doctor.

A HOSPITAL IN SEOUL, KOREA

There is no class of medical work which interests us more than that being done by our missionaries in foreign lands. We have had occasion to refer to some of it from time to time, and we are reminded again of what so many of our brethren in this field are doing and of their almost unlimited opportunities for doing good, by the receipt of a copy of the "Report of Severance Hospital," of Seoul, Korea. This hospital is under the

management of an old friend of ours, Dr. O. R. Avison. The entire plant was donated by Mr. L. H. Severance of New York City, and is in charge of the Korea Mission of the presbyterian church. It has only been open to patients since September, 1904, but the amount of work already accomplished is enormous and the character of the work of the highest possible type. This is due largely to the untiring labors of Dr. Avison, who through long years of struggle and discouragement has been seeking to bring succor and hope to the suffering sick of Korea.

In the report just at hand we find many things of interest. During the last year 655 patients occupied beds in the hospital. Of the medical cases the largest number were malarial, most of these coming from the coolie class and especially from laborers along the railroads being built by the Japanese. Many of these cases are very severe. Pneumonia cases rank next in point of number; some of these are of the peculiar type known as "tojil" pneumonia, or endemic hemoptysis. A few cases of tuberculosis are received and many cases of erysipelas, dyspepsia and diarrhea, with a few of typhus, smallpox, diphtheria, etc.

On the surgical side there have been many cases of gunshot wounds. For instance, in the outbreak of the Koreans against the Japanese, in 1907, 62 cases of gunshot injuries were admitted and 6 of bayonet and sword wounds. One interesting result of this incident was that when the disbanded Korean soldiers engaged in guerilla warfare, no Christian received injury from them. An illustration in the Report shows an enormous abdominal tumor successfully removed at the Severance Hospital. There were many operations on the liver and intestine and other major cases. In the dispensary more than 17,000 treatments were administered during the last year, 6000 of these being new cases. The medical staff also did a large amount of office work for which pay was received.

Perhaps the most interesting feature connected with Dr. Avison's work was the establishment of a medical college, for the native Korean youth, which graduated its first class of seven young men this year. What makes this college work all the more striking is the fact that there were no medical books published in the Korean language. With the aid of a staff of native helpers Dr. Avison is making the translation of textbooks, and copying and mimeographing these for the use of his students. The "Anatomy" is now complete. Other books being translated and already in use in the class-room are those on physiology, chemistry, the miscrocope, pathology, diagnosis, bacteriology, materia medica, therapeutics, skin diseases, practice of medicine and a medical dictionary.

The seven men just graduated from the school are said to be of an exceptionally high type. They are studious and resourceful and their clinical opportunities have been of the very best. They have splendid opportunities to act as helpers in the hospital and dispensary. The Japanese Government has signified its approval of this medical course by granting these graduates special certificates, which, with their diplomas, were awarded in person by Prince Ito, the resident General.

We have a special interest in Severance Hospital because we have known Dr. Avison through correspondence for many years. We have almost a personal interest in the magnificent work he is doing—a work which deserves every encouragement at the hands of his friends here in America and especially from the American medical profession.

AN INFANTILE MONSTROSITY—CEPHALOCELE

Herewith enclosed you will find two views of a monstrosity I had in a confinement over two years ago.

Case of Miss H., primipara, at full term; but the young woman had laced so tight that she fooled the neighbors completely. The child was a male and very much alive when born and weighed 12 pounds. Could not close the left eye. Upon examination of the tumor I found it to contain no fluid but to be composed of brain-matter and in consequence I called it "brain tumor," or more

correctly, cephalocele or hernia of the brain.

At about the sixth month the mother received a very bad fright from a runaway horse and of course believes that that was the cause of the deformity and does not think that the tight lacing can possibly have anything to do with it.

It is needless to say that the child died, but at birth he was a healthy-looking sub-

Cephalocele, reported by Dr. Nelson M. Rhodes, Urbana, Ohio

ject and he had a college yell that was in a class by itself. The child had no occipital prominence at all, being nearly flat in this region with the head sloping and up from the back of neck.

The mother's health had always been good and the family history is also above reproach, so I cannot blame the deformity on any disease.

NELSON M. RHODES.

Urbana, O.

AN INTERESTING CONFINEMENT CASE

Some time ago I was called to attend a case of confinement which presented some features that were new—at least to me—and also some about which there might be a difference of opinion in regard to treatment. I therefore take the liberty to ask you to give my brief report a place in your columns and let someone tell me that I did right or wrong in my management of the patient.

On October 3, 1908, I was called to attend Mrs. C., multipara, aged 35, whom I had attended in two previous labors. I found my patient in bed with a nurse in attendance. According to her calculation it was time for her to be confined. The day previous she had done some washing, in fact a hard days' work under existing circumstances, but felt no unpleasant symptoms until about three hours before she sent sent for me, when there was a rupture of the membranes. A large flow of water but no pain had followed, and she was feeling about as usual.

I proceeded to make an examination, but was unable to reach the cervix without the introduction of my whole hand, which I did not consider necessary. By palpation, however, I discovered that the fetus was lying high up in the abdomen and transversely. After some minor directions I advised the patient to keep her bed until the next morning when, if no pain came on, she might get up but not to indulge in any work; to call me, however, at any time if pains or other unpleasant symptoms developed.

I went home and heard nothing more from the woman until three days later, when I was called again and found my patient in bed and having quite regular pains but with very little expulsive force. I found conditions practically the same as before, the os out of reach and the child in the transverse position, high up.

After waiting half an hour, I dissolved a hyoscine-morphine tablet in ten teaspoonfuls of water and told the nurse to give her one teaspoonful every fifteen minutes until the pains stopped. Two hours later I was informed over the telephone that the medicine was all taken and that the pains not only contined but were getting harder. Arriving at the bedside of my patient, examination disclosed, greatly to my surprise and satisfaction, that nature had straightened things out. The head was presenting, pains were regular, fairly strong, and everything pointed to an early and satisfactory termination of the case.

Time passed on, however, and the advance was slow, without any apparent cause

except a large head. I finally gave my favorite remedy, strychnine nitrate, gr. 1-40, to increase the contractions. And right here let me say that after many years of experience I have found this remedy the surest and strongest stimulant to the uterus in labor that I have ever used, and that my instrumental deliveries have been few and far between since I began its use. But notwithstanding this, the patient was getting discouraged and began to complain that pains did no good and that the child did not help her any. I asked her what she meant by that, and she replied that he did not push down with his feet.

Now here was a new one for me. I asked her whether her children usually helped her out in that way, and she replied, "Certainly, they always do." Now, I am free to acknowledge that I had never heard or even thought of such action on the part of a child in the act of being born, and have been wondering whether it was so common and so little thought of that no one had ever considered it worth speaking of in my presence or of putting it into the books on obstetrics.

Well, to go on with the case. My strychnine soon began to manifest itself in more powerful contractions of the uterus and my patient was delivered of a large, finely developed male child; but he was dead, and, from all data that I could obtain upon which to form an opinion, he might have been dead for twelve hours—but not longer.

Now, should I at my first visit have performed version and terminated the labor, or was I justified by the successful termination of similar cases in my practice in waiting for labor to begin?

Is the idea of the child's pushing down pure imagination of the patient or is it an actual common occurrence?

I remember several cases in my obstetrical experience when there was an apparent overflow a week or ten days previous to confinement and all terminated favorably both to mother and child, nature in some manner closing the rupture as soon as the excess of fluid passed away. And here let me say in explanation that this was my reason for not inducing labor at my first visit in this case.

J. H. BENNETT.

Boyne, Mich.

[Our foresight never quite equals our hindsight. Frankly, I should have pursued the same course as Dr. Bennett. Let our lady readers who know from experience say whether the infant helps his own expulsion, kicking his way into the world. I have heard women speak of the child helping.—ED.]

HE USES THE FORCEPS

Hurrah for Dr. Ira C. Young and the forceps! I have found in my experience that the use of forceps does no harm if used properly. I always use them when everything is ready for them, even if I think I shall only save one hour of suffering for the mother, and I believe we owe it to her as humanitarians, whether she be a multipara or primipara.

If laceration results, it would have resulted without the use of forceps, and when repaired will not heal so well, it being more contused from the prolonged pressure of the head.

I have never had any untoward effects after forceps, and as a rule where I had an instrumental delivery the mother always wants forceps used at her next labor.

I feel sure that Dr. Young is right, and am glad to hear he does not support the old-fashioned timidity for the instrument.

F. J. KALOL.

Omaha, Nebr.

HOW OFTEN SHALL WE USE OBSTETRIC FORCEPS

I have read with pleasure the article in the July CLINICAL MEDICINE, by Dr. Ira C. Young of St. Louis, on "Do We Use Obstetric Forceps Too Often?" For the safety of both the child and the mother I certainly agree with him that we do not use them enough. I resort to the forceps to relieve the mother from prolonged suffering,

as well as to minimize the danger to the babe from prolonged pressure. If the instruments are used skilfully the babe is scarcely ever injured. To use traction only during the pain, as mentioned by Dr. Young, is a good rule, but there are times when we find the pains so infrequent that it is unwise to wait. But one of the very important precautions to take in this connection is always to *unlock* the instruments during the intervals of rest.

To pull one's hardest until one is out of breath and during the periods of rest leave them tightly locked (as I have seen done a number of times) is not skilful work. Finally, when the babe's forehead comes in view, I find it much safer to the soft parts not to pull the head through with instruments intact, but remove them here and, with the hands, *knead* the head through the vulva. In this way perineal tears will be the exception and not the rule.

A. C. EWING.

Salt Lake City, Utah.

PRESSURE ON THE PERINEUM

I have tested this, and find that it does produce prompt defecation, under favorable circumstances, fecal matter being present in a rectum, normal or nearly so. Pressure between the anus and coccyx is even more effective, and pressure directly on the anus still more so. When the rectum is incompletely emptied, the act of wiping will often bring out the rest of the feces in a hurry. If this fails, the finger inserted into the rectum and hooked, so as to produce pressure on the sphincter from within, will generally succeed. I have cured a case of constipation of long standing, without spasm or contraction of the sphincter, by moderate and gentle dilation of this muscle.

I would tentatively suggest the following explanation: Defecation is normally effected by mechanical pressure of the feces on a nerve-center in the inner sphincter. When, for any reason, this normal stimulus becomes insufficient, it may be supplemented by the action of the abdominal muscles, increasing the pressure, or by pressure on the same center from without the anus, instead of from within.

All signs fail in dry weather, and all the above procedures fail in constipation.

C. F. MORRISON.

Springdale, Wash.

A LITTLE CRITICISM OF DR. BOTT'S REPLY TO DR. RITTENHOUSE

It is only a little criticism of a most capital article, one with which I most heartily agree with one exception.

The most impressive lecture I ever attended was one in which not a word was spoken—when old Dr. Meigs wrote upon the blackboard:

"A Meddlesome Midwifery is bad."

A practice of fifty-three years has proven to me the truth and the value of those five words, and the lesson, *Give nature a fair show.* Therefore I criticise the doctor's routine practice of washing out nature's lubricant from the vagina with bichloride solution or anything else.

I use the forceps when absolutely necessary and only then. I have in hundreds of cases found the administration of a half grain of tartrate of antimony save the use of instruments.

JEROME BRUCE.

Sanford, Fla.

SUGGESTIVE HINTS FROM A LAYMAN

Here are two little hints from nonprofessional sources that seem worthy of record and to be remembered for occasional application.

The first concerns the use of sugar of milk as a laxative, as reported by an old friend. This man, originally a drug clerk, now manager of a large insurance business, is 64 years of age and as a German turner uses beer and wine freely. He says there is absolutely nothing the matter with him except occasional attacks of costiveness with accompanying piles. He claims and is positive about it, that a dose or two of sugar of milk, one to two teaspoonfuls in water, acts on him as a laxative. He does not re-

member just in what way he came to use it in this manner.

Another friend, a letter carrier, of about 62 years, recently told me of his use of epsom salt for sleeplessness. He has been a sufferer from constipation, indigestion and rheumatism (and wears a hernia truss). Whenever flatulence prevents him from going to sleep he takes one teaspoonful of magnesium sulphate in a glass of water. Sleep comes on in a very short time. When he was a in hospital with a fractured limb a next-door patient had increased temperature and tossed about sleeplessly, owing to overindulgence in pie. The suggested teaspoonful of epsom acted as if by magic, the young fellow sleeping beautifully in fifteen or twenty minutes. The intelligent nurse quickly tried this magic somnifacient on several other similar cases and with the same results. Here seems a hint for an extended application of effervescent saline laxatives.

ADOLF G. VOGELER.

Chicago, Ill.

JUST TO THINK ABOUT

"It is heart-lifting to note the recently growing tendency among a few contributors to *de luxe* medical journals to write their independent observations instead of the usual encyclopedic summaries with excessive bibliographic appendages. The bibliography apology for plagiarism enables a medical ass to pose for a gifted scientist. Did you ever hear of anyone investigating bibliography?"

"Poor old chronic therapy! Every other element in medicine has been fed and fattened, while you remain slab-sided, anemic, and, inferentially, a mongrel, an incubus. Your natural legitimate conservators practically ignore you, while honest (and more dishonest) foster-parents scantily nourish you. You are or ought to be the constant nightmare of the conscientious physician, and your present poverty is or ought to be the everlasting shame of those responsible for your abject condition. You occupy the paradoxical position of being starved and yet you feed. Of being barren and yet you generate. In spite of your helpless negative condition you have furnished the bulk of the nourishment of the eternal quack, and have originated most of the therapeutic fakes of modern times. *And, yet, low as you have sunk, you are emphatically the most important subject before the scientific world.*"

"The most important work for those investigating remedial agents has not yet been started or even suggested, namely, a determination of the accuracy of the recognized textbook physiological actions of official drugs. Exhaustive work in this direction would doubtless weed out many useless agents and dignify many useful ones. It would at least annihilate the drugless therapists and incite conscientious physicians to resume the study of medical materials. If the orthodox physiological actions are accurate our latter-day therapeutic negativeness is inexcusable. Otherwise we are just plain dupes of pseudo science."

We quote these paragraphs from *The Bulletin of Animal Therapy*. They strike home. The great need of the medical profession, to study the healing of the sick, is emphasized therein none too strongly.

CANCRUM ORIS: A CLIMAX IN PATHOLOGY

Under the above caption, I shall endeavor to offer a few words to the "family" concerning the condition, growth and final development of a case which came under my immediate control and subsequent treatment during the month of December last. I was called to go a distance of about six miles to see a little boy six years old who was said to be "awful sick."

Upon my arrival I found the following conditions present: Little boy lying in an indifferent mood—paying but little attention to family and surroundings. On entering the room I was met with a very offensive odor, strikingly resembling that from a corpse. This was sufficient evidence in my diagnosis of mortification. The family informed me that the patient would cough and spit up wads of coagulated blood that gave rise to this stench. The feces voided were of the same character, and like-

wise offensive. Upon examination I found cardiac action very weak, temperature 102° F., respiration hardly discernible. These indications were properly met, but I had only the slightest hope of his recovery.

On my next visit, three days later, I was informed that several teeth had fallen out; and, on further examination of his mouth, I found large cankered patches on the tongue and mouth, upper and lower gum necrosed, and the inferior maxillary bone could be plainly seen in a number of places. The patient's heart-action was wonderfully improved, temperature near normal, which gave me considerable encouragement, but I knew I was up against "the real thing."

My introductory treatment on the first visit was as follows: Large dose of castor oil with five drops turpentine added, to be repeated in two hours if necessary till bowels were moved freely. After this, I ordered calomel, soda and podophyllin given every one and one-half hours till the feces showed hepatic stimulation sufficient. This was immediately followed by the sulphocarbolates every fifteen to twenty minutes till saturation. I believe this saved the situation. I controlled further hemorrhage by ordering the administration of a strong tea made of tannic acid. Partial paralysis of the pharyngeal muscles rendered deglutition almost impossible; hence medication was reduced to liquids. A mouth-wash consisting of iodine, phenol and potassium chlorate was ordered used, which soon cut off the cankered patches and healed the gums and mouth.

Owing to the condition of the patient's mouth and throat, I confined the diet to buttermilk exclusively for about two weeks. The action of buttermilk on pathogenic bacteria suggested this dieting.

Every subsequent development was successfully met, and the little patient is now comparatively well. This is one among quite a number of complicated cases I have had here, and I attribute the unbounded success in my management of them to active-principle therapy. The arsenates of iron, quinine and strychnine, with nuclein, were used in the foregoing case with very gratifying results.

E. W. GOSSETT.

Chicot, Ark.

[There is a mix-up in nomenclature between cancrum oris and noma. The former usually signifies oral diphtheria and the latter gangrene, but some employ the terms exactly the opposite. Dr. Gossett was fortunate—and skilful in his treatment.—ED.]

RESPIRATORY FAILURE

If the other members of the family find themselves up against it, as I often do, for a respiratory stimulant, there is no one thing you could better give than a lift along this line. The class of cases I refer to are those of dyspnea primarily due to failure of the respiratory center or to some trouble in the lungs themselves and not secondary to cardiac weakness. In a hospital like this, where we have all kinds of cases, we often see both kinds of failure. The heart failures are easily and generally met by hot saline enemas or transfusion, along with hypodermics of suitable heart tonics. But with the respiratory failure it is a different story. I have seen several patients with a fairly good pulse develop great difficulty in breathing, the respiration becoming fast and jerky and finally pass out in spite of all the stimulation that could be given. These were cases where there had been no asthma or lung trouble but where the respiratory apparatus just seemed to be unable to work longer.

About ten o'clock the other night the head nurse called me, telling me that one of the women in the ward was very ill. As soon as I reached her I met that same condition, which I have seen prove to be the sign of the approaching end: rapid, labored breathing as though much obstructed, face pale and patient mentally obtunded. The pulse was 97 and of good volume, temperature 102° F. This woman had been admitted with pleurisy, which had cleared up nicely with antiphlogistine locally, saline laxative, bryonin and Dover's powder internally. Her age was 72.

As the bowels had not moved that day I had the nurse give a high cold enema, while I injected 1-100 grain of atropine with a combination tablet containing digitalin, gr. 1-100; glonoin, 1-300; strychnine sulphate, gr. 1-40; atropine, gr. 1-1000; and sparteine sulphate, gr. 1-150. Then I prepared a dozen papers of caffeine, 1-2 grain each, which were to be given one every half hour for four doses and one every hour thereafter. Before leaving I administered a granule each of glonoin and strychnine arsenate and ordered two to be given together every hour. I ordered cold compresses to the head and left quinine to be given when the fever came down, as I suspected the return of fever was due to malaria.

Now that was certainly firing a whole round, but I was desperate. At any rate the old lady recovered and now is about in the wheelchair. Examination of blood the next morning showed it loaded with the plasmodia of Laveran. She was put on quinine hydroferrocyanide, 1-6 grain every half hour that day and every hour the next few days, and temperature has not been above normal since.

V. M. PINKLEY.

Guanajuato, Mexico.

[At first thought it strikes me that you are describing cases of death, but the fact that your case recovered indicates that it is not simply the terminal symptom of a case where, the vitality being exhausted, this is inevitable. The indication seems clearly defined; the remedy is, first, glonoin to send the blood to the brain and check that cerebral anemia which would certainly otherwise end in death; second, atropine or hyoscyamine to sustain this effect and stimulate heart and lungs; third, strychnine, the greatest respiratory stimulant known. These three I believe are best used by giving glonoin, hyoscyamine and strychnine arsenate, in small doses, every ten, twenty, thirty or sixty minutes, according to the need, and after that often enough to sustain the effect.

In the meantime I would feel like injecting hot coffee into the rectum and using decinormal saline solution hypodermically. In cases of malaria, unquestionably the cinchona alkaloids should come next. Probably quinine hydrochloride or hydrobromide enough to break up the present attack; quinine arsenate, half a grain to a grain daily to prevent recurrence, and berberine, a grain a day for six months to reduce the size of the spleen.

Quinine hydroferrocyanide is unquestionably a very effective tonic in such conditions and the arsenates of iron, quinine and strychnine ought also to be exceedingly effective.

With these suggestions I leave the question to the "family", whose collective wisdom is so very much greater than my own that I look with interest to note what suggestions this correspondence will elicit from them. —ED.]

HINTS, HELPS AND INSPIRATION FROM MEXICO

Under ordinary circumstances an investment offering more than 100 percent profit should be looked upon with suspicion, but I have a proposition that will pay four times that on a small amount. If anybody will send me copies of any medical journal better than the July CLINICAL MEDICINE, I agree to pay him five times what it costs him. I think it is the "best ever." This offer will only apply to July numbers for, of course, succeeding numbers of THE CLINIC will be even better. It's a way it has.

In Dr. Bott's article, page 812, ninth line from bottom, what does he mean by saying, "in some of these very cases clots are passed?" His article pleased me very much. It is all, or nearly all, in accord with my beliefs and practice.

Atropine is all right. I tried it singly and in combination in a bad case of menorrhagia with subinvolution which I have since curetted. Iron, ergotin, digitalin and hydrastin were given with no benefit until I added atropine enough to make the patient red all over. That did the business and did it right away.

Have used cotoin, codeine, arsenite of copper and hydrastin with splendid results in several cases of diarrhea and dysentery. One little five-year-old boy, whom ipecac did not relieve at all, was entirely cured with these remedies of a bad case of dysentery in less than one day. He was on the vessel practically all the time, with terrible tenesmus. He did not have a single bloody passage after the first dose of the above remedies, and tenesmus stopped immediately. Every similar case got well almost immediately under this treatment.

If I had not learned anything from you during the past twelve years except the use of these preparations, with hyoscyamine for abdominal pains, calx iodata for croup, the "infant's anodyne," the defervescent and trinity compounds, I should consider myself well paid.

Having practised in Colorado four years I am fully in sympathy with Dr. Wikle, page 805, where she speaks of the eastern doctors sending dying patients to Colorado. I saw a great deal of that sort of thing while there. After leaving there I lived in Ramos Arizpe, a small place on the Mexican National, between Monterey and Saltiello. The climate there is a thousand times better than anywhere in Colorado, or in any part of the United States that I know of. There is an elevation of five thousand feet, the climate is very equable, never very hot nor very cold, very little rainfall, good water, lots of sunlight; and it's better for the nerves than Colorado, as the natives are of the siesta class.

Helpful Happenings.—Boy during siesta bit on inside of upper lip, in two places, by some venomous insect, probably spider or scorpion; brought to me within an hour. Upper lip swollen, also left side of face. Applied ammonia water as strong as he could stand it. No result. Next day painted with mixture of equal parts of carbolic acid, camphor and chloral hydrate, *à la* Dr. Gray. No benefit. Swelling continued so that by next night left eye was nearly shut. That side of face and all of the upper lip frightfully swollen. Mother very anxious to have "medico" do something. Medico pencilled with silver-nitrate stick all over the swollen face, outside and inside. Result fine. Next day patient playing around *completamente aliviado. Muy bien medico!* Three or four days later woman with upper part of the right side of face and around eye terribly swollen from bite of some venomous insect. Treatment with silver-nitrate stick. Result: Cured almost immediately.

Has Dr. Shastid (page 756) or any other doctor tried, in those sclerotic troubles of the optic nerve, fibrolysin or sulphate of chromium? Seems as though one or both of these drugs ought to cure.

Urine Taken Internally.—I had a bad case of stomach trouble about two years ago. Medicines I and other doctors gave him did him no good. He afterward told me that a woman had cured him with urine—internally administered. No psychotherapy about it!

Suppurative Otitis (page 844).—I haven't failed yet with the following: Boric acid, 1.2; alcohol, 16; water, 16. Mix. Drop into the ear at body-temperature while the patient is chewing gum. Have cured dozens of patients in this way. Dissolve the boric acid first in hot water, then add the alcohol.

Cured one case of nystagmus and twitching of muscles in different parts of body with syrup of iodide of iron, 15 drops thrice daily.

CARLOS O. RICE.

Sabinas, Coah, Mex.

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[These notes, jotted down during the busy day's activities, are intensely interesting to us, and we believe to every other reader of CLINICAL MEDICINE. Let others comment in similar fashion! Dr. Bott doubtless referred to fecal masses in his article.—ED.]

EMPYEMA

I read the journals—read what the doctors write about their bad cases and how nicely they get along, and at times I feel just a little blue. I have just lost a patient—a boy seventeen years old. He was taken with pneumonia—rather severe attack. I dismissed him conditionally after twelve

days and was called again in two weeks, as the boy was not doing well and had some fever. I found my patient had developed empyema in the right side. I operated on the patient, drained the pleural cavity well, and thought my patient would be soon well. Fifteen or twenty days later another backset, and I found the pericardial sac full of pus. I advised drainage, got ready to drain, but the family objected and I didn't drain the pericardium. Although counsel was called in to assist me, my patient died—died from purulent pericarditis. I could not help it.

On April 10 I was called to see Virgie M., a little girl eleven years old. I found a severe attack of pneumonia in the right lung, of the cerebral type. I gave the usual treatment, controlling fever and pulse-rate with Norwood's veratrum viride and tincture aconite; purged her well and endeavored to quiet her mania with sedatives. On April 20 I dismissed her as she was doing nicely. I gave her an elixir of iron, quinine and strychnine as a tonic.

On May 10 I was called again to see her as she had begun to have fever and was not doing well. I found her with fever, temperature 102.2° F., and a right pleural cavity full of pus. As she had all the evidences of effusion I decided to operate—the effusion reaching to the second intercostal space. Tuesday, May 11 (the day following) I inserted an aspirator, confirmed the diagnosis, then operated, cutting through the sixth interspace. Her side is still discharging some pus. I used a fenestrated rubber tube one-half inch in diameter. Her temperature is now normal and she is improving rapidly. She takes sulphide of calcium, and an elixir of iron, quinine and strychnine as a tonic.

I am an advocate of blistering in pneumonia and blistered with cantharidal cerate. Can it be possible that the blister was the seat of infection from which the empyema resulted? I must confess I don't know. I often blister but have never had empyema follow before in my own practice.

I have gained some very valuable therapeutical information from your journal. I have never adopted the alkaloidal method exclusively, but find lots of good things among the alkaloids. I am not an advocate of polypharmacy and believe that the more accurately you diagnose, the less medicine it is necessary to give. I treat lots of pneumonia, and some of my cases give me just lots of trouble and occasionally one dies.

W. C. CUNNINGHAM.

Dexter, Tex.

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[That empyema should sometimes follow pneumonia is to be expected. Sometimes pleurisy is the initial malady, the diagnosis being mistaken. I see no reason for blaming the blister as if this were the point of germ entrance the route would most likely be through the lymphatics and not straight through the thoracic wall to the pleura. In all suppurations the three cardinal points for treatment are: cutting off fecal toxemia, saturating the body with sulphides and reinforcing the leukocytes with nuclein—this in addition to the other treatment indicated by the case.—ED.]

AN OMISSION CONCERNING THE PHENOLPHTHALEIN COLOR REACTION

In an article by Dr. J. Reed Lytle of Richmond, Kansas, on page 1007 of the September CLINICAL MEDICINE, the doctor omitted to state that a little lime-water should be added to the solution in the test-tube in order to insure the color reaction.

LOCKJAW—HYDROPHOBIA

The recent dissertations of Doctor Sterman on the cause of lockjaw in the horse and the "accidental" discovery of a cure for it by puncturing the ventricles of the brain made me sit up and take notice. The relation of the discovery of the cure by the doctor was told so graphically and with so much earnestness that I was convinced in my mind that there was something in it. But after cogitating over the matter for some time I thought of the days when I was a boy on the farm in the late fifties and early sixties of the past century.

My connection with the farm brought me in relations to the swine on the place, and they were, some of them, often taken with the "blind staggers," so called, by my uncle and aunt who raised me. Now, the treatment of the pigs affected was boring their heads with a gimlet. I am unable to say as to whether or not any of the pigs so treated ever recovered, but I am inclined to think that, as my aunt had been born in Tennessee and partly reared there, the treatment recommended by Doctor Sterman was not by accident discovered by this man Miller, but was known by the inhabitants of that part of the country for many, no telling how many, years.

I concluded, however, to see the "new" treatment carried on in the horse if possible and so consulted Dr. Singer, the assistant state veterinary surgeon for this part of the State, and asked him to allow me to be present at the first opportunity he had for trying the remedy. He answered me that he had already tried the treatment on a horse just recently and it was a failure, but promised to allow me to attend the operation in the next case he had of tetanus. He told me that in his equine patient he had given the treatment a fair trial, he had bored, trephined, into the ventricle of the horse's brain, but did not hear any escape of gas nor see any amelioration of the symptoms, and that the horse died as promptly as if there had been nothing of the sort done to him.

While writing I wish to report the following case, simulating hydrophobia.

Jennie E., one year old, was bitten on the hand by a dog about 4:30 p. m., on Sunday, September 12, 1880. A large house-dog belonging to a farmer was gnawing a bone in the yard when the little girl toddled out to where he lay upon the grass and stooped down as though she were going to pick up the bone, when the vicious brute grabbed her hand and lacerated it quite severely. I saw the child the next day and found her hand badly swollen and bound up with a "live-for-ever" poultice.

The patient was feverish and very restless. I gave anodynes. Tuesday the patient was worse. Treatment continued. Wednesday forenoon the patient was improved but worse in the afternoon. I saw the patient again at midnight and found her "wild with opisthotonos," according to the notes taken at that time. The wailing of the young mother for her child and the mutterings and sympathetic moanings of the friends gathered in was distracting to me. I knew not what best to do. It was believed by all that the babe would surely die.

In my desperation I concluded to administer a hypodermic injection of morphine and atropine. This procedure with me now would not cause me any concern, but when we remember that it was twenty-nine years ago, when the community was not educated up to the use of the subcutaneous method of administering medicines and when a large portion of the medical profession itself was chary of it, surely obliged me to screw my courage up to the highest limit. In speaking to Dr. Carroll of Taylorville, one of the oldest and best qualified physicians at that time in the country, he said, "It is a wonder you didn't kill the patient."

Well, I didn't kill the child, but soon saw her considerably relaxed and the mother and friends, as well as myself, in a more comfortalbe state of mind. We could hardly expect the child's recovery, but I gave her chloral and had the satisfaction of getting her to sleep a "couple of hours." The chloral was continued, and in the morning the following prescription was written: Chloral, 1 dram; potassium bromide, 3 drams; camphorated tincture of opium, 1-2 ounce; peppermint water, 3 drams; simple syrup, q. s. ad 3 ounces. Give one teaspoonful every two hours, if necessary, to keep quiet.

I am unable even at this time to state what was the matter with my little patient, but at that time, having been taught, and of course firmly believed, that hydrophobia was incurable, and knowing little or nothing about tetanus, and naturally nothing of serums and toxins, I wrote in my note-book this diagnosis: "Spurious hydrophobia."

What matters it what the particular pathological condition was, the patient re-

covered, and barring the modern treatment of the antitetanic serums, which assuredly I should add to my treatment, I should now give just about the same treatment if I had another case like it.

If this case had been in an adult or youth I should have thought that the sympathy of the parents and friends had caused what we call "hysteria," and I thought of the same at the time, but considered my patient too young to be affected by suggestions from the bystanders.

J. J. CONNER.

Pana, Ill.

A BOOK BY DR. CLEMENTS

We are glad to note that Dr. Joseph Clements' most recent work is soon to be issued, being now in the binder's hands. It is entitled: "The Metaphysics of the Nature and in the Conception of the Soul Its Habitat." The price is $1.00. It will be placed on sale at the bookstores; or, if one desires he can obtain it by writing to the author, at 1537 South Main St., Wichita, Kansas. Dr. Clements is known to readers of CLINICAL MEDICINE and other journals as one of the profoundest thinkers in our ranks. His works usually require study and are well worth it. We hope that the profession will welcome this work as it should.

BENNETT MEDICAL COLLEGE

This institution has left the ranks of eclecticism, its faculty has resigned from eclectic medical societies, and the college and faculty have enrolled themselves in the ranks of regular medicine, complying with all the requirements of the American Medical Association. Bennett Medical College will henceforth be strictly regular. All departments comprised in the curriculum of any other regular medical college are provided. The college equipment has been approved by the state board.

Besides this, that special attention which eclectics have always given to applied therapeutics, to the treatment of the sick and the direct application of drugs and other therapeutic agents to the symptoms presenting, will be continued. The use of the active principles will not be neglected, this department being in charge of a teacher who is believed to be fully qualified.

Last year, despite the disadvantages, Bennett enrolled the largest class of any eclectic medical college in the United States, and stood fourth in attendance among the numerous colleges in Chicago. This year the class promises to be very much larger than last year. Altogether we feel that Dr. Robertson and his associates are to be congratulated upon the move they are taking. They are giving the students all the advantages heretofore enjoyed by eclectic colleges, without sectarianism and the consequent prejudices to be overcome.

BARNES UNIVERSITY APPOINTMENTS

The trustees of the Barnes University of St. Louis have recently increased the teaching staff of the Medical Department. Dr. James Moores Ball has accepted the chair of ophthalmology and ophthalmic surgery. Dr. J. J. Houwink has been elected professor and head of the department of dermatology and syphilology. Additional laboratory equipment has been installed, and the medical buildings have been thoroughly renovated in preparation for the winter's work. The Centenary Hospital, with 100 beds, adjoins the medical school and is a valuable asset for clinical teaching.

CLIMATE FOR INVALIDS

In a recent issue of CLINICAL MEDICINE appeared an article under the above heading. For the benefit of those who are not familiar with the facts, so far as Colorado is concerned, I wish to make a few corrections.

No man can rightly judge a climate by only a year's residence. The United States Weather Bureau, or other reliable authority should be consulted. The doctor who does not do this, in sending his patients for

climatic benefits, always makes a mistake. I have lived eight years in Colorado and the past year was very different from any one previous. There was more humidity and more cloudy days. The record of twenty years was broken.

This state, an empire in itself in which all New England with New York thrown in, could be placed and still have room left over, must necessarily have a varied climate, especially when altitude, as we have it here, is considered.

Out on the hot, sandy plains, as at Pueblo, the Pittsburg of the West, made up principally of a foreign element, no beneficial climatic effects may be expected. If the children born there suffer from brain lesions, it's because they come from that class of people. The better class do not employ a doctor who has been only a year or so in the town. What little experience he had must have been among the Poles, Italians, etc.

I believe we have only one insane asylum. In my home state, Pennsylvania, there are many and all full, which argues nothing as to climate.

My experience of eight years here has knocked out all my former views regarding hemorrhage and heart trouble. This coincides with the best authority of recent date. I quote from the well known Dr. Beggs: "The impression that patients who have suffered from pulmonary hemorrhage should not go to high altitudes is erroneous, as experience has taught us that these cases above all others are the most curable; also we would insist that valvular heart disease does as well as at sea level, provided compensation is reasonably good, indeed, we believe that compensation is improved under the rest-cure in high altitudes."

In crossing the Rockies at 10,000 to 12,000 feet one is going to the extreme. I personally know over a score of people who came here ten or fifteen years ago, given up to die in the East, had severe hemorrhages there, now attending to their business with never a symptom of their old trouble.

It is humidity that the comsumptive must avoid. Lots of sunshine with a dry, cool climate, just cool enough to sharpen the appetite and aid the digestion of carbonaceous foods, this with the rarified ozone mountain air gives the tubercular patient the best results.

It has been the habit to send all hopeless cases to Colorado. Under proper medical care and direction, every first- or second-stage case of the disease will recover here. This assertion is founded on years of experience. I have no land-scheme to work off on a suffering people, but speak the facts for those who may stand in need of them.

I have visited nearly every state in the Union but am not competent to judge the climatic conditions of more than two or three. This is good common sense, the sheet-anchor in the practice of medicine.

M. W. PAGE.

Denver, Colo.

THINGS USEFUL IN EPILEPSY

Under the above subcaption our good Dr. Waugh jabs a thumb into our ribs and wants to know a few things about our experience in epilepsy.

I have had some experience, and some bad cases too, and I believe I have some of them cured, but owing to the nature of the disease, I have waited to see if there was going to be any return. However, I believe it will do no harm to give a succinct account of my treatment.

Before doing so, however, I wish to give a little reminiscense of college life. While attending college we had a superb teacher in pharmacology. He was thoroughly learned, and one of the hardest quiz-masters of my experience as a student. During this time the regular journals were full of the cures wrought in epilepsy by œnanthe crocata, and, of course, what we did not have to learn about œnanthe was not worth know ing. In fact we were quizzed so closely on this drug that we ungenerously dubbed our professor "Old Œnanthe Crocata."

For two or three years now I have never heard of the drug being mentioned in this disease. Why? Are the professors of medicine chasing medical phantoms? Or are

they devising new ways to keep themselves before the public in an advertising way, while their confrères are relegated to the backwoods and told that it was naughty to advertise their attainments? Or, perchance, it may be that œnanthe crocata has lost its virtue as a "specific" for that group of symptoms called arbitrarily epilepsy.

The constant chasing of "specifics," so called, for arbitrarily named groups of symptoms is the worst kind of phantom-hunting, because it fails to take into consideration the patient himself. Disease is not an entity to be killed by the administration of a chemical, but it is the result of the reciprocal action of a morbific cause and the human system. No two human systems being exactly alike, no single morbific cause can obtain a perfectly similar symptom group as a result of its reciprocal action.

As a further deduction, a remedy to be suitable to a given case must, of necessity, manifest its action upon the same parts of the organism affected by the morbific agent, and to know whether this is true or not, the symptom-complex of the patient, reciprocating with the drug, must confirm the action, and is the only sure means of knowledge. I do not mean purely subjective symptoms but all findings known to science.

I have been using œnanthe crocata in epilepsy ever since. I have not looked for it to cure all my cases. It is only "specific" to those cases which it cures. The cases it most certainly benefits are those that most nearly represent a typical grand-mal, in regular order. Irregular cases have not been much benefited by enanthe, but have been by solanum carolinense. The indications for these two remedies are diametrically opposite; for instance enanthe must be given in very small doses and not too often repeated.

To illustrate: Mrs. G. A. P., age 38, having borne five children, called me in to see her through an abortion, and she had an epileptic seizure while I was attending her. I inquired about the attacks and found a history dating back to 14 years of age. Cause unknown; parents normal. She had been treated with bromides till she was almost a physical as well as a mental wreck. She was discouraged and would not take more medicine than this, and did not like doctors. They "always gave her the same stuff." I told her I was different and promised never to use another dose of bromide. I kept my word.

To keep her quiet during the withdrawal of bromides I gave her 1-1000 grain hyoscyamine every five hours and two teaspoonfuls of tinct. passiflora incarnata three times a day. Then I put 5 drops tinct. œnanthe crocata in two ounces of sugar of milk, shook thoroughly and gave one-grain powders of this three times a day at first, then two times, and so forth, till after a year's treatment she now gets a powder every fourth day. The adjuvant treatment as above was discontinued in two weeks.

I have insisted upon outdoor exercise, plain food and elimination, all through the treatment. I always do insist upon these requisites. When I took her case she had one to two attacks every day. She has now had only one slight attack in eight months. Her whole condition shows bodily as well as mental health, and I am now informed she is doing her own work and successfully passing through pregnancy, something impossible for years heretofore.

Another case illustrates the use of solanum carolinense:

Young man, age 20, Norwegian. No family history. A typical epilepsy attack, always ushered in by pain in spine, gradually going to head in course of two or three hours, when he would become unconscious and go through the epileptic seizure with slight spasms only, coming out drowsy and sleepy, dull mentally. Scars on tongue. Solanum carolinense, 20 drops, was given four times a day, gradually increasing till he felt extremely dizzy at every dose, which took almost a teaspoonful. This was continued for two weeks and then the dose was gradually diminished till in three weeks more the medicine was discontinued.

The patient left the neighborhood six months later and I lost track of the case, but there were no further returns while the patient was under observation.

I could multiply these cases, but what is the use! The whole thought is, *never forget a drug having powers of healing the sick.* Study it persistently and find out when, and when only, it is serviceable, and cease the phantom-chasing of disease-"specifics."

A. E. COLLYER.

Elgin, Nebr.

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[No remedy ever yet cured the name of a disease. If you boys only knew what a relief it is to forget your name-diagnoses and treat what you find to treat!—ED.]

HOW DOES TOBACCO AFFECT THE GROWING BOY?

The harmful substances in tobacco smoke are: carbon, which acts mechanically as an irritant; carbon dioxide, which tends to produce sleepiness, headache and a tired feeling; carbonic oxide, a very active poison, which causes drowsiness, unsteady movements of the muscles and vomiting; and nicotine, so called—a combination of nicotine proper, ammonia, bitter resinous extractive, and other volatile substances. The ammonia bites the tongue, makes the mouth dry and induces thirst, thereby causing the smoker to drink frequently; it also excites free secretion of saliva and exerts a solvent action on the blood-constituents. The alkaloid nicotine induces tremor, palpitation of the heart and paralysis, while the indeterminate volatile substance causes a sense of oppression and gives an unpleasant odor to the breath.

Concerning the action of tobacco on the system Doctor Horatio C. Wood writes as follows: "Upon persons who are not habituated to its use, tobacco acts as a very powerful depressant, producing horrible nausea and vomiting, with giddiness and a feeling of intense wretchedness and weakness. If the amount taken has been large, to these symptoms are added burning pain in the stomach; purging; free urination; extreme giddiness; passing delirium; a rapid, running, and finally imperceptible pulse; cramps in the limbs; absolute loss of muscular strength; a cold, clammy skin; and, finally, complete collapse, terminating in death."

Nicotine is an exceedingly fatal poison; very small quantities, even one-thirtieth of a grain, have caused poisonous symptoms in the body, and large doses almost instant death.

Tobacco makes the blood more fluid, prevents the developments as well as causes breaking down of the red blood-corpuscles, and lessens the power of the blood to take up oxygen and throw off carbon dioxide, thereby retarding the cell changes upon which the growth of the body depends. It produces debility and irregular action of the heart and lowers the tone of the whole circulatory system. It weakens digestion and interferes with the assimilation of food, and not only prevents the combustion of waste substances in the system but retards their elimination.

Tobacco depresses the nervous system, producing languor, feebleness, relaxation of the muscles, trembling of the limbs, great anxiety, and a tendency to faint. It irritates the brain and interferes with the centers in the brain which regulate the blood-vessels to such an extent that the latter are unable so to adjust themselves as to produce healthy and untroubled sleep. The power of fine coordination is likewise decidedly lowered by the drug.

Tobacco frequently causes disturbances of special senses. The sense of smell is impaired and hearing sometimes is lowered; but of all the special senses the sight is most seriously affected and tobacco amaurosis, or blindness is not an infrequent result of the excessive use of this drug.

The question as to the effects of tobacco on the growing boy or youth is now definitely settled by accurate scientific investigations. From measurements of 187 men of the class of 1891 of Yale College Dr. J. W. Seaver found that the nonusers of tobacco gained in weight, during the college course, 10.4 percent more thant the regular users, and 6.6 percent more than the occasional users of tobacco. In height the nonusers increased 24 percent more than the regular users, and 12 percent more than the occas-

ional users. The nonusers registered an increase of 26.7 percent more in chest-girth and 77.5 percent in lung capacity than the regular users. These facts in regard to the dwarfing effects of tobacco are corroborated by a similar series of observations made by Dr. Edward Hitchcock at Amherst College.

That tobacco has a bad effect on the muscular system and lowers the power of the endurance is strongly emphasized by the fact that "stop smoking" is one of the first orders given a young man on engaging in training for a race or game of any kind requiring strength and endurance; because every experienced trainer knows that smoking lowers the working power of the human muscle by a large percentage and that to smoke merely invites defeat. If tobacco so seriously injures the young athelete during a short period of training, how much greater must the injury be in the preparation for the arduous duties of our exacting modern civilization. How seriously handicapped is the boy who enters the race of life with every cell of his body poisoned by nicotine.

According to the evidence of teachers and educators all over the civilized world, tobacco exerts a very pernicious effect on the student. He becomes dull, lazy and unreliable, and retrogrades in his work. Indeed so marked were these effects that "in France the difference in scholarship between students in the polytechnic schools who smoked cigarets and those who did not, as shown by their respective class-standings, was so great that the Government prohibited absolutely the use of tobacco in all government schools. "Out of thirty principals and teachers interviewed by *The Chicago Record* all were agreed that a low standard of scholarship characterized the boy who habitually used cigarets." The extended investigation of Dr. Seaver, of Yale College and Dr. McDonald's studies of school children at Washington, conclusively show that cigaret smokers are more feeble physically and mentally than other students.

This, together with the fact that a very large percentage of the prize-winners and men who stand highest in their classes do not use tobacco, ought to convince every unprejudiced person that tobacco is at least injurious to the mind of the developing youth.

Nor do its effects end with the physical and mental deterioration. It has also a very demoralizing effect on the nature of the young. In addition to making boys tired, stupid and lazy, it makes them irritable, perverse and careless of the rights and feelings of others, besides in many instances leading them to lying and even stealing. Then, too, it may lead to selfishness and a disregard of the rights of those nearest and dearest to the users.

For many years I have been firmly convinced that much of the pallor, anemia, malnutrition and the many evidences of retarded growth and development so frequently seen—especially among the poorer classes of our people—are largely due to the tobacco-laden, poisoned atmosphere which these children are obliged to breathe. Many a time I have gone into small, poorly ventilated rooms, where at best it was difficult to get sufficient pure air, and found a child suffering from pneumonia or some other severe disease so enveloped in the foul fumes of tobacco smoke that it could scarcely breathe, and every breath it did take was poisoned air. And I have seen the father, who apparently was very anxious about his child's welfare, puffing away complacently at an old pipe the horrible odor of which ought easily to win for it the place of honor in a tannery or a whitelead factory; and this man, while doing more harm than all the science and skill of the medical profession, armed by the whole materia medica could counteract, probably would be finding fault with his physician and blaming him for the child's slow recovery. Nor is this the most discouraging part of the matter; because in quite a number of instances, when their attention was called to the evil effects of the tobacco smoke, the fathers became angry and refused to believe that it had any such effect.

Neither, according to competent authority, is the evil limited to the users themselves, but it lingers to curse their descendants. "No evils are so manifestly visited upon the

third and fourth generation as the evils which spring from the use of tobacco," says Sir. Benjamin Brodie.

In conclusion it may be asked, why is it more dangerous to smoke cigarets than cigars. Without doubt this is due to the fact that in smoking cigarets it is the custom to inhale the smoke. In this way the deadly nicotine is brought in contact with hundreds of square feet of air-cell surface of the lungs, while with cigar smoking only the small surfaces of the buccal cavity and nose are exposed to the poison.

E. STUVER.

Fort Collins, Colo.

EXPERANTO FOR THE PHYSICIAN

(Continued)

EXERCISE VI

Kvin kaj sep faras (1) *dekdu.—Dek kaj dek faras dudek.—Dekduo estas same* (23) *kiel dekdu.—Dudek pomoj* (2) *faras dudekon.—Kvar kaj dekok faras dudek du.—Sesdek minutoj* (3) *faras unu horon* (4), *kaj unu minuto konsistas* (5) *el sesdek sekundoj* (6).—*La monatoj* (7) *de la jaro* (8) *estas nomataj* (9), *la unua, Januaro; la dua, Februaro; la tria, Marto; la kvara, Aprilo; la kvina, Majo; la sesa, Junio; la sepa, Julio; la oka, Augusto; la naŭa, Septembro; la deka, Oktobro; la dek-unua, Novembro; kaj la dek-dua, Decembro.—Hodiaŭ* (10) *estas la naŭa* (*tago*) *de Julio.—La dek-sesa Kongreso Internacia de Medicino kunvenos* (11) *en Budapesto, la dudek-naŭan* (12) *de Augusto, kaj kunsidos* (13) *ĝis la kvara* (14) *de Septembro.—La kvina Universala Kongreso de Esperanto okazos* (15) *en Barcelona, Hispanujo, la kvinan de Septembro, kaj daŭros* (16) *ĝis la dek-unua.—Mi bezonas alemnaŭ dekduon* (17) *da ligiloj* (18).—*La ĥirurgiisto* (19) *havis duon* (20) *da helpantoj* (21) *kaj kvar malsanulistinojn* (22).

NOTES

(1) *Fari*, to make. (2) *Pomo*, apple. (3) *Minuto*, a minute. (4) *Horo*, an hour. (5) *Konsisti*, to consist. Note that the preposition used in not *de*, of, but *el*, out of. *De* in Esperanto signifies possession or agency; partition is represented by *el*, out of, or *da*, of in the partitive sense. Thus *unu el la pomoj estas malbona*, one (out) of the apples is bad. (6) *Sekundo*, a second. (7) *Monato*, month. (8) *Jaro*, year. (9) *Nomi*, to name; *nomata*, present participle passive, "being named." (10) *Hodiaŭ*, today; *tago*, day. (11) *Kunveni*, to convene. (12) *Dudek-naŭn*. Note the accusative. The date on which an event occurs is always in the accusative, unless a preposition (e. g., *je*) is used. (13) *Kunsidi*, to be in session, to sit together. (14) *Ĝis la kvara*. The date here is in the nominative because it is governed by a preposition, *ĝis*, until. (15) *Okazi*, to happen, or take place. (16) *Daŭri*, to continue. (17) *Dekduo*, a dozen. The partitive preposition, *da*, of, is used when some things, whether defined or not in number, are taken from the whole. Thus: *multe da ili*, many of them; *kelke da pomoj*, some (of) apples (though we may also say, *kelkaj pomoj*, some apples); when the cardinal number is used in apposition, however, no preposition is required. *Donu al mi dekdu ligilojn*, give me twelve ligatures. (18) *Ligiloj*, ligatures. *Ligi*, to tie or bind; thus *lig-il-o*, a ligature. (19) *Ĥirurgi-o*, surgery. Thence, *ĥirurgi-ist-o*. (20) *Duo*, a couple. (21) *Helpi*, to help. *Help-ant-*, present participle, active, "helping;" consequently, *help-ant-o*, an assistant. (22) *Mal-san-ul-ist-in-o*, A female occupying herself professionally with *malsanuloj* (patients), a nurse. (23) *Same*, the same, adverb, from *sam-a*, same.

FRACTIONS, MULTIPLES, AND COLLECTIVES

The suffix which, added to a cardinal number, indicates a fraction, is *on-*; it takes the substantival or adjectival terminal according to the manner in which it is used, thus: *du estas kvarono de ok*, two is a fourth (or quarter) of eight; but, *la sesona parto de dek du estas du*, the sixth part of twelve is two.

The distinction between an ordinal and a fractional number must be clearly grasped. In English we use, in most cases, the same word for both, but the difference is clearly expressed in Esperanto. Notice the distinction between *kvara parto* and *kvarona parto* in the following sentences: *La kvara parto de la libro estas dediĉita al la gramatiko*, the fourth (in order) part of the book is

devoted to the grammar; but, *kvarona parto de la libro estas okupita de la indekso*, a fourth part (in amount) of the book is occupied by the index.

Multiples (corresponding to the English -fold, -ple, -ble,) are indicated by the suffix *obl-*, which also can be used nominally, adjectivally, or adverbially. Thus, *la duoblo de kvar estas ok*, the double of four is eight; *li enmetis duoblan parton*, he put in a double portion; *li insultis min double*, he insulted me doubly. Collectives add *op-* to the cardinals: *duope*, by (or in) twos, or couples; *kvarope*, by (or in) fours: *la militistoj marŝis kvarope*, the soldiers marched in fours.

Repetitives, signifying once, twice, three times, etc., are represented in Esperanto by the substantive *fojo*, a time or occasion, used either in the accusative case, singular or plural as required, or combined with the cardinal number in adverbial form, *-foje*. Thus: He did it once, if he does (shall do) it a second time I shall punish him, *li faris ĝin unufoje* (or *unu fojon*); *se li faros ĝin duan fojon, mi punos lin;* they bled her six times, *ili sangelliris ŝin sesfoje* (or *ses fojojn*).

EXERCISE VII

La malsanulo prenu du plenkulerojn (1) *da la miksaĵo* (2) *ĉium* (3) *kvaran horon; ankau* (4) *li prenu pilolon* (5) *ĉium kvaronan horon.—Por* (6) *ĉiu vizito* (7) *mi ricevas* (8) *unu dolaron* (9), *sed por noktaj* (10) *vizitoj mi demandas* (11) *duoblan pagon* (12), *tio* (13) *estas, du dolarojn.—La gramo* (14) *estas proksimume* (15) *egala* (16) *kun dekkvin granoj* (17); *la decigramo kun unu komo,* (17) *kvin granoj; la centigramo, kun komo, dekkvin granoj; kaj la miligramo kun komo, nulo* (19), *dekkvin granoj.—La sepesmilo* (20) *estas la Esperanta mona* (21) *unuo* (22); *ĝi valoras* (23) *proksimume la duonon de unu dolaro; tial du spesmiloj valoras unu dolaron. Kvinoble sep estas tridek kvin—Ses estas la duono de dekdu, kaj dekdu estas la duoblo de ses.—Mi havas dekduon da preniloj* (24), *sed nur duon da sekciloj* (25).—*La studentoj duope ekzamenas la malsanulojn—Vezikigu* (28) *ŝin* (29) *trifoje.—Alportu* (30) *al mi trioblan pansaĵon* (31).—*Li englutu* (32) *la pilolojn duope.*

NOTES

(1) *Plena*, full; *kulero*, a spoon. (2) *Miksi*, to mix. (3) *Ĉiu*, each, every. (4) *Ankaŭ*, also; (5) *Pilolo*, a pill. (6) *Por*, for, on behalf of. (7) *Vizito*, visit. (8) *Ricevi*, to receive. (9) *Dolaro*, a dollar. (10) *Nokto*, night. (11) *Demandi*, to ask. (12) *Pagi*, to pay. (13) *Tio*, that, (indefinite; when "that" qualifies a noun, *tiu* is used). The table of correlatives will be explained in a coming lesson. (14) *Gramo*, a gramme; *decigramo*, *centigramo*, and *miligramo*, explain themselves. (15) *Proksimume*, approximately. Proksima, near; *-um* is an indefinite suffix occurring in a few words which will be explained later. Instances of its use are from *plena*, full, *plenumi*, to fulfil; *aero*, air, *aerumi*, to air; *bruli*, to burn, *brulumo*, an inflamed swelling; *kolo*, neck, *kolumo*, a shirt collar; *vento*, wind, *ventumi*, to ventilate, *ventum-il-o*, a fan; *butono*, a button, *butonumi*, to button up. There are about 25 such words that have literary Esperanto authority, but of course when the significance of the suffix is understood there is nothing to prevent any word being made, provided that it is self explanatory. (16) *Egala*, equal. Note *egala kun*. (17) *Grano*, a grain (weight); grain, as applied to a cereal, is *greno*. (18) *Komo*, the decimal point. (19) *Nulo*, a cipher; a nought. (20) *Spesmilo*. Esperantists have a universal monetary system whereby the moneys of various countries can be easily and quickly correlated. The table will be given later. (21) *Mono*, money; hence *mona* is monetary. (22) *Unuo*, a unit. (23) *Valori*, to be worth. (24) *Pren-il-o*, an instrument for taking hold, a forceps. (25) *Sekci*, to dissect; hence, *sekc-il-o*, a scalpel. (26) *Studento*, an enrolled student. *Lernanto*, a learner might be used, though it applies rather to the act of learning. *Lernisto*, one whose vocation is learning, is also used. Either word explains itself, and herein lies the beauty of Esperanto. (27) *Ekzameni*, to examine. (28) *Veziko*, a vesicle, or blister. *Vezik-ig-i*, to make a blister, to blister. (29) *Ŝi*, she. (30) *Alporti*, to bring to, or fetch. (31) *Pansi*, to dress a wound.

CLINICAL · MEDICINE
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PART III.—LESSON ONE

FEVER

GENERAL CONSIDERATIONS

By the term fever we mean an elevation of animal-temperature above the normal, varying in degree, and when the word is used alone we mean nothing else. If the fever shows a temperature of one, two, or three degrees above the normal, we look upon it as mild in form. If it runs up to four and five degrees above the normal, it indicates danger; if it exceeds six degrees, the danger is serious; when it passes seven, the chance of persistence of life is very small; while, when it attains eight degrees, if the condition continues very long, death is all but certain. At an increment of eleven degrees of heat above the natural, continuance of life, with but the rarest of exceptions, is impossible. Before this stage is reached the minute blood-vessels have undergone contraction, the muscles of the body, generally, have shown a tendency to spasmodic contraction which may pass into tetanus, and the blood, in some instances, has commenced to separate into two parts, or, as it is commonly said, it has begun to set, or coagulate.

Fever a Condition of Disease.—Fever thus becomes a condition of disease running with other conditions which may, locally, be more apparent, but which in a general sense cannot be more definite. It is not a basic condition, for it is a result of something that preceded it. But it determines the after-results so decidedly, that to retain it as if it were basic, and to speak of irritative fever, inflammatory fever, contagious fever, intermittent fever, hectic fever, scarlet-fever, malarial fever, and the like, is quite correct, if we only keep in mind the simple truth that the added words merely express either the origin or the course of the phenomena of the febrile state.

A good simile of this is given us in the example of a common fire. Fire is not a base; it is a result; and yet it determines consequences so decidedly that it very soon becomes one dominant fact. Fire may be sharp, slow, bright, smoldering, accidental. It may be a coal fire, a wood fire; it may be continued, intermittent, subdued, wild; and by all such terms we may distinguish its character. Instead of serving its intended purpose in the house of manufactory, it may be playing the part of a destroyer. Fever is the counterpart of this in the house of life; it is the animal fire burning beyond

what is natural, excited to that burning by something that was, in a basic sense, the prime cause of the condition of disease.

Empiric Classification of Fevers.—It is customary to say of persons suffering from various acute diseases and from some slow or lingering diseases, that they "have fever;" that the fever runs high; that the fever is reduced; that the fever is intermittent, and so on.

Under this term fever of the older writers sometimes meant one special disease, which they defined no further. Afterward fever began to be considered under two heads, according as it was or was not communicable. There were *contagious fevers*, or such as were communicable by touch and could be conveyed by something that was capable of being carried from the affected to the healthy; and there were *infectious fevers*, or such as could be contracted by coming into immediate contact with the poison that was emanating from those affected. Again, there were fevers that were neither contagious nor infectious—*simple fevers;* or which ran a continued course—*continuous fevers.*

By another change of expression fever was connected with diseases of particular organs, as with the brain, *brain-fever;* or with particular functions or states, by which method of expression we got such terms as *milk-fever*, *child-bed fever*, etc. Then, again, fever was connected with another general term, inflammation, so giving rise to the term *inflammatory fever;* or it was considered to be the result of some irritation, from which view was derived the expression *irritative fever.*

We have not lost these expressions, but use them when we are speaking correctly, with more precision. We have now learned to take with the thermometer the temperature of the human body, and we accept the natural average temperature of 98.4° F. in temperate climates, with a range of 0.2 on either side, below for arctic, and above for tropical conditions. It is the fact, even in what may be considered health, that these ranges may be extended on either side for short periods of time. When therefore the temperature of the body is shown by an accurate thermometer to be 98.4° F., we consider that there is a natural temperature. When the temperature is above 98.4° F., to any marked degree, we say there is fever. We now measure fever and its accompanying dangers with almost exact detail: so much fever, so much or so little danger; so much probability of recovery, so much probability of death.

The influences which set up fever in the animal body are many. If sensitive nervous surfaces are rubbed or irritated so that pain results there is an increase of temperature, *irritative fever.* The fever may be of short duration and harmless, lasting only so long as the irritation lasts and dependent on the disturbed nervous balance, but still present.

If, from local causes, any organ of the body becomes inflamed, there is soon some increase of temperature, i. e., fever, *inflammatory fever;* it will vary in intensity with the extent of the inflammation, and will probably subside with the inflammation, but will not fail to be present. If some foreign substances, minute particles of matter —fever poisons—be introduced into the body, they may modify the animal chemistry so as to increase the animal combustion and produce fever, *contagious* or *infectious* fever, which will remain so long as the disturbance remains in operation. Such fever may, in some instances, subside from reduction of the cause, and then break out again as the cause is reproduced, or it may by its violence, either before or after the cause has ceased to operate, give rise to a destruction which renders death inevitable.

If the body be exposed to agents which modify the vascular tension so that through the vessels the blood shall pass with undue friction, there may be an increase of fever, which might be called *frictional fever.* Or if the tension of the vessels be reduced by some agent, like alcohol or cold, so that the heart shall intensely inject the minute vessels with blood, there may then be, from the reaction, an increase of temperature, *fever* of *reaction*, or *congestive fever.*

Lastly, if the body be subjected to the influence of some agent which, interfering for a time with the animal-chemistry, causes a development of fever, then ceases to act, as if it were itself destroyed, but after a time is reproduced and sets up once more the increased temperature, there is excited what is known as *recurrent, relapsing, intermittent,* or *hectic fever.*

Definition of Fever.—Thus it will be seen that the word fever indicates a condition of the widest significance, while in itself it is not, strictly speaking, a disease.

Fever, properly defined, is an exalted state of that natural function by which all the flexibility of life, the chemistry of life, the constructive arranging of matter into living form, the destruction and removal of matter in dead form, is regularly carried on. In short, in fever, the body is living out of its compass, and wherever the term is used in these lectures, let it be remembered as meaning fire, overaction—expenditure beyond the natural capacity of vital process.

It may be well to speak of the doctrine of fever and its effect upon the body generally, in order that we may intelligently apply our remedies in the treatment of it.

Cohnheim's Theory of Fever.—Cohnheim believed that the nervous system presides over thermogenesis no less directly than over thermolysis. He accordingly sought for evidence of increased production of heat throughout the febrile process.

In the initial stage, particularly when the rise of temperature is rapid, Cohnheim admitted that the cutaneous circulation was restricted, but not that this restriction was the cause of the rise. The sensation of chill is due to suddenness of the diminution of temperature at the surface; when the change occurs gradually, it is absent. It is succeeded, in the fastigium, by a feeling of warmth, which means that the constricted vessels relax. He leaves undecided whether this is due to the intervention of inhibitory nerves or not, but emphasizes the fact, as evidence of vasomotor disturbance, that the more favorable state of the cutaneous circulation which characterizes the beginning of the fastigium is liable to interruption by the recurrence of chills, in which the skin becomes dry and the temperature tends to rise. The critical sweating was, of course, regarded by Cohnheim as a sign of increased flow of blood to the surface, which is attributed to the influence of dilating nerves. Of cutaneous nerves of secretion little was known at the time when he wrote.

The remarkable fact that in fever the diurnal range of variation is much greater than in health, Cohnheim attributed rather to fluctuations in thermogenesis than to changes in the circulation. This view seemed to him supported by the consideration that in relapsing fever the efficient cause of pyrexia is plainly the presence of spirilla in the blood, and these would influence thermogenesis rather than surface loss. Had he known how close is the relation between the successive stages of ague and the life-history of the organism which causes it, he would have been confirmed in his conclusion that in periodic fevers the periodicity is a function of the cause, and not of the disease.

Senator's View.—In common with Virchow and all modern pathologists, Senator regards fever as a disorder of temperature regulation, but for him the term regulation connotes "regulation by the cutaneous circulation." It is thermolysis, not thermogenesis, that is in the first instance disordered. This disorder is most marked in the initial stage, but it is present in the fastigium, declining toward its close. Its presence manifests itself in dryness of the skin and maintenance of the high temperature, but neither state is caused by the other; both are directly dependent on the nervous system.

Finally, Senator regards the relation between the constituents of fever as a loose one: he believes there is no absolute interdependence of the disorder of nutrition and the pyrexia. The only invariable causal relation is that which subsists between pyrexia and disorder of the cutaneous circulation.

A More Probable Explanation of Fever.—Pyrexia appears possible, first, by interference with the central regulating apparatus in the brain, which preserves a

normal exchange of heat, an appropriate production being accompanied by a corresponding output of heat. Second, by a simultaneous alteration of heat production and output in an unequal degree occurring during overproduction of heat, the central regulating apparatus, which is concerned in removing the abnormal degree of warmth, acting too sluggishly. Combinations of these two modes, as also the overproduction itself and other factors, come into play.

Now, infective fever exhibits some features which cannot easily be attributed to increased heatproduction with normal but insufficient output, or to unchanged formation of heat, accompanied with lessened removal, or to an association of the two modes. The output of heat has been found to be as a rule increased during the onset and height of fever, usually taking place during the first period, and increasing during the height of the fever. During the defervescence the heat output may still increase, or may diminish. Of course the absolute extent of metabolism in itself affords no measure either of normal body-temperature or of pyrexia, and an increase above the normal is often wanting; such an increase of heat predisposes in each case to an absolute or relative diminution of the output.

The conjecture naturally arises that the disturbances of heat production and output are merely means by which the organism attempts to reach a common end. We understand by this how Liebermeister advanced his view that the body in spite of existing differences of heat production and output tries to reach, and subsequently does maintain, that higher level. The regulating center, according to Liebermeister, is to be regarded as so stimulated by the cause of the fever that it reacts to a normal external temperature as it ordinarily does to the external application of cold.

The Respiratory Exchange.—In man the respiratory exchange is not materially altered in fever, either in quantity or quality; and when it is increased the increase is not to be regarded as an essential character of the febrile state, but rather as an effect of some abnormal form of muscular activity.

The Discharge of Nitrogen.—The fact that the rate of discharge of nitrogen by the kidneys in fever is equal to or even greater than that which prevails in health, notwithstanding that the intake of nitrogen is reduced to a minimum, has been long familiar to students of pathology. It has also been long known that on the whole the elimination of nitrogen runs with the temperature; that the daily discharge is often more than double what it would be in a healthy person on fever dirt; that although the increase of nitrogen elimination begins before the temperature rises, the rate of elimination is greatest, not during the initial stage, but at an early period in the fastigium, and finally, that defervescence is often followed by an epicritical increase. It is true that in fever the nitrogenous waste can be diminished to a considerable degree by a suitable diet.

In fever glycogen disappears from the liver, and cannot be replaced by the administration of amylaceous foods. This obviously means that the supply of carbohydrate in the organism is exhausted early, and that in consequence the organism begins almost at once to feed on itself.

All the acetone bodies—namely, acetone itself, acetic acid, beta-oxybutyric acid—have been found in the urine of patients with elevated temperature. Acetone appears first, then acetoacetic acid, and finally beta-oxybutyric acid, and they disappear in the reverse order. Beta-oxybutyric acid was first found in scarlatina, severe dysentery and typhoid. Its occurrence indicates the more strongly marked, but at the same time limited, disturbance of oxidation in a special direction.

Functional Disturbances in Fever.—In a large number of infectious fevers and processes, particularly in pneumonia, but also in typhoid, intermittent fever, measles, and scarlatina, a retention of chlorine in the organism is met. During convalescence the reverse takes place. The retention of chlorine is not, however, observed in all infective processes. A markedly increased

excretion of chlorine takes place, for example, during an attack of malaria.

The digestive secretions are lessened in fever. Decrease in salivary excretion leads to dryness of the mouth and throat attended with increased thirst.

Among qualitative changes, alteration of the alkaline reaction of the salivary secretion to acid has often been asserted. It is well to remember this fact, because there is a lessened alkalinity of the blood in the majority of febrile cases, calling in many instances for alkaline remedies.

The gastric functions as a rule are affected in febrile diseases. The secretion of hydrochloric acid is diminished in fever. Complete arrest of the secretion of hydrochloric acid does not occur, but the amount secreted is so small that the affinity of the food for the acid is not satisfied. Von Noorden obtained, together with numerous negative results, distinct evidence of hydrochloric acid during high fever, provided much pepper and salt were added to the meat taken. From this it follows that the torpor of the secretory organs in febrile diseases can be overcome by strong stimulation. In accord with the observations of other investigators, Von Noorden always found a sufficient amount of pepsin in the chyme during febrile conditions.

The motor functions subserving digestion are usually depressed in febrile states, so that constipation and flatulence are common. Defective peristalsis affects especially the distal part of the intestinal tract, and is not known to affect the upper end of the small intestine. This condition is possibly of vast importance; at any rate it may be that, in consequence of a sense of fulness or other unpleasant sensations dependent on defective emptying of the intestines, the amount of food taken becomes less than would otherwise be the case.

Among the glands of the intestinal tract the liver occupies the first rank, and is affected in almost every acute febrile disease. The secretion of bile is lowered and the bile is more viscid, containing mucus, and is less darkly stained than normal. The viscid condition of the bile in febrile conditions, in conjunction with cloudy swelling of the liver, due to toxic substances circulating in the blood, have apparently led to the idea that in some cases of acute infectious diseases the escape of bile is hindered and icterus results. Such icterus is perhaps due to stasis of the bile, the passage of bile-pigment into the blood and tissues formed by the destruction of hemoglobin, being facilitated by viscidity and chemical change (coagulability) of the bile and narrowing of bile capillaries. Thus will we readily understand how hepatic stimulants are valuable in febrile conditions.

The Origin of Fever in Brief.—Now, to recapitulate briefly as to the origin of fever: Either fever originates in disorder of the nervous centers, producing pyrexia, and as a secondary result disorder of nutrition, *or* it originates in a disorder of protoplasm to which the nervous phenomena are secondary.

Thermogenesis, *thermolysis* and *thermotaxis* must be regarded as three separate functions of the nervous system.

It seems, at first sight, difficult to see how, under conditions tending to bring down the bodily temperature, the cooling of the body can be prevented in any other way than by the direct influence of the nervous system on the production of heat. We have learned from Zuntz's experiments that the exercise of this influence is not essential.

The key to the apparent difficulty is to be sought in the consideration, that in a warm-blooded animal of constant temperature the supply of heat is always potentially in excess. It is obvious that in a warm room more heat is being produced than is wanted, but it is not so obvious, though equally true, that in the cold of winter the bodily temperature would rise at any moment if surface loss were suspended or annulled. In the two cases the "mechanism" is the same. Hence it does not seem necessary to imagine more than one regulating center *in constant operation*—that which presides over surface loss.

Hints on the Treatment of Fevers.—These conclusions, if they are correct, give us some hints as to the treatment of fevers.

What, now, for instance, is the condition of the skin? Is it dry, constricted, full or relaxed? What remedies, in the form of baths or internal medication, will right these wrongs? If the increase of temperature is associated with the waste of tissue, we find it important to provide a better fuel for burning, and thus allay the excitation caused by the destruction of tissue.

In acute diseases we furnish material which will support the system, as at the same time we modify the process of combustion as much as possible. In chronic disease we think of foods that contain calorifacient material in excess, and that are at the same time easily digested. In chronic disease we shall find, frequently, that no improvement takes place until the wrong of temperature is rectified. This wrong of temperature is but the expression of disease. If the disease is favorably influenced by remedies the temperature falls or rises toward the normal standard.

Thus in a given case of disease we may see the pathological wrong, whether of the blood, of the nervous system, or of waste and excretion, and at the same time the indications for the remedy, and we know that its use will reduce the temperature. In a case of malarial fever, to illustrate, we have a special indication, quinine, or some other antizymotic remedy. It will influence the temperature toward the normal standard.

Temperature Often a Result, Not Cause.—But in many cases the wrong of temperature may be regarded rather as a cause than as a result. If the temperature is above the normal standard the functions of life are impaired in the ratio of the excess. Thus, as we know, increase of temperature is invariably associated with acceleration of the pulse, and is usually proportionate to the frequency of the pulse, one degree corresponding to an increase of ten beats per minute. The frequency of the pulse corresponds to the increase of temperature as a rule. Increase of temperature is also associated with frequent respiration. With an increase of temperature there is an arrest of digestion, blood-making, nutrition, waste, retrograde metamorphosis, and secretion from skin, kidneys and bowels. We also find that structural lesions are influenced in the same manner. Inflammation is active in proportion with increased temperature, as is also the tendency to suppuration. The influence of zymotic causes of disease is also increased in the ratio of increase of temperature, and the condition known as typhoid is marked in proportion to it.

Variation of Temperature.—In acute fevers and inflammations we find the temperature increasing in proportion to the severity of the disease. It does not, however, remain uniformly the same throughout the twenty-four hours, but presents a marked morning decline and evening elevation. This is very distinct, even in continued fevers, which we are accustomed to think of as being uniform in all their phenomena. This fluctuation is rarely less than one degree, and is frequently two degrees or more. In the course of many diseases, where diagnosis has been accurately made, if the temperature departs from its normal, or typical, range, the thermometer will furnish the best and earliest indications of any untoward event in its course, such as the additional development of disease or other visceral complications.

When once the typical range of temperature, "normal" as it were, of the particular disease is determined, the basis is laid, appreciating irregularities or complications in its course in particular cases.

For example, a patient exhibits symptoms of fever of the typhoid type, but during the progress of the first week his temperature becomes normal, for however short a space of time—the occurrence of this event proves that the fever is not what it is supposed to be, at least that is what we can easily decide upon. Again, a patient may suffer from all the general symptoms of pneumonia, but there is still a doubt as to whether infection of the lung has taken place. The sputa, being suppressed or not procurable, do not assist in the diagnosis. If, however, the temperature is found to be normal, it is certain that no croupous exudation has taken place in the lungs, and the prognosis

is favorable. Then, again, if a tuberculous patient has a sudden attack of hemoptysis, and the temperature of his body is normal during and subsequent to the attack, no reactive pneumonia nor exacerbation of the tuberculous exudation need be expected.

Period of Convalescence.—In all cases of convalescence, so long as the defervescence proceeds regularly, as measured by the temperature, no relapses need be feared. On the other hand, delayed defervescence in pneumonia, the persistence of a high evening temperature in t phus or typhoid fever, or in the exanthemata, and the incomplete attainment of normal temperature in convalescence, are signs of great significance. They indicate incomplete recovery, supervention of other diseases, unfavorable changes in the products of disease, or the continuance of other sources of disturbance requiring to be carefully examined into. The onset of even a slight elevation of temperature during convalescence is a warning to exercise careful watching over the patient and especially for the maintenance of a due control over his diet and actions.

Now, is it possible, by controlling the circulation and lessening the frequency of pulse, to lower the temperature? By controlling the pulse and temperature, may we not change a severe and dangerous case oftentimes into a mild dangerless one? These are questions which will be answered later when we come to take up the treatment.

Fevers Can Be Aborted.—Another thing. Is it possible to arrest the fever before it has run its course? We are satisfied that this question can be answered in the affirmative. A fever terminates naturally. Our acute diseases are socalled self-limited diseases. They terminate with the decrease in the frequency of the pulse, diminution of the temperature, and the reestablishment of secretion, by which, often, the cause of the disease is removed.

If, then, by the use of remedies we can favor elimination of toxic waste products, change the character of the body-secretions, lessen the frequency of the pulse, and obtain an equal and uniform circulation, with a corresponding decline in temperature, we go a long way toward limiting the course of the disease. The question naturally arises, then, Does the temperature bear the same relation in chronic diseases, and will treatment influencing the temperature have a like curative influence? I think we can answer this also in the affirmative.

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MEDICINAL TREATMENT OF FEVER

It is now generally understood that the peril in fevers lies mainly in the toxemia.

The principal therapeutic indication is to keep the quantity of toxins in the blood down to a point where the vital forces are capable of taking care of them.

Three methods present themselves for accomplishing this object, namely:

1. We seek to stop the intake of toxins by confining the diet closely to articles containing the smallest proportion of toxic elements or that are capable of yielding a supply of toxins to the blood. This means the limitations of nitrogenous foods to the lowest point compatible with the needs of the body and the selection of the purest and most readily digestible forms, such as milk and eggs. Rice, barley and oatmeal waters and the pure, fresh fruit juices should form the bulk of the food. Milk may be employed, natural or skimmed, or as junket, buttermilk, whey or kumiss; or also combined with eggs in custard or egg-nog without the liquor. Given with strong coffee, unsweetened, it is an elegant stimulant-nutritive when the bodily forces are low.

Milk should be prescribed as to quantity and frequency, four ounces every four hours being a good average for any age. Abundance of water should be supplied to flush the emunctories, sustain the nutrition of the tissues and keep up the blood crasis.

2. The second means of lessening toxemia is by cutting off the supply absorbed into the blood from retained fecal matters. Nobody who has noted the fetor of the stools coming from a fever-

patient will doubt that this matter is better outside than inside the patient's body.

The supply of bile, gastric juice and other digestive fluids is notably lessened during fever, and these admittedly are the natural disinfectants of the bowel. The ordinary microbic flora of the intestines is reinforced by various pathogenetic varieties, and so, under the influence of warmth and moisture, prolonged by retention with an abundant supply of putrescible nitrogenous material, and the simultaneous absence of the ordinary physiologic safeguards, both of these groups of ferments multiply exuberantly and take on malignant qualities. In the light of this we now can see the evil influence of the check of peristalsis. All these ills pertain to fevers, *per se*, while they are greatly increased in typhoids and other maladies where specific pathogenetic germs invade the bowels.

It is for this reason that we positive therapeutists begin the treatment of all fevers by first of all completely clearing the bowels. To accomplish this, we may give one centigram (0.01 Gm.) of calomel and a like dose of podophyllin every half hour until six doses are taken, following this by a full dose of a good saline laxative. This procedure may be supplemented by flushing the colon with plenty of warm alkaline water; or even, if the symptoms of fecal toxemia persist, with kerosene. Next, seek to disinfect the alimentary canal, administering up to as high as 40 grains of *zinc* sulphocarbolate per day, double that dose of *sodium* or of *calcium* sulphocarbolate, or else an appropriate combination of these three salts, increasing or decreasing the dose as may be required to remove all abnormal odor from the stools. This task accomplished, the patient should receive enough laxative and antiseptic medication each day to keep the bowels clear and clean. No set dose can be suggested—give just enough to accomplish the object; no more, but also no less.

3. The third method of reducing toxemia is by maintaining elimination by way of the kidneys and the skin at the highest possible point.

Both coffee and buttermilk constitute good diuretics. The guide here in serious cases is to be found in daily examinations of the urine, the total excretion of urinary solids being watched carefully.

Pilocarpine is a diaphoretic of rare value, the perspiration so freely exuding under its influence being five times more loaded with solids than ordinary sweat, i. e., one-half the density of urine.

Good sense will prevent pushing elimination unreasonably, especially in weakly patients, although the weakness may really be due in large part to the toxemia.

Regulation of Circulation Paramount.—We now come to the fever itself. This is best treated by regulating the circulation.

Spasm of the blood-vessels is to be relaxed by the use of aconitine; and as this spasm, because it lessens the quantity of blood in the contracted vessels, is exactly balanced by paresis of other circulatory areas, where the blood supply is correspondingly increased, we add digitalin to restore the tonicity of these relaxed vessels. This forms the basic treatment of all fevers and inflammations. This association of remedies was one of the most profoundly important discoveries of the early active-principle advocates, that since these two opposite pathologic conditions coexist, the two apparently antagonistic remedies act simultaneously, each on the area where its action tends to restore normal equilibrium. Some patients show marked debility, as in the asthenic form of fever, and Burggraeve here added strychnine arsenate to meet this condition —strychnine being indicated as a general vital function inciter, arsenic to promote speedy resolution of the morbid products of disease.

Treatment of Sthenic Fever.—In cases that are sthenic, the heart pulsating too powerfully and sending too much blood into the inflamed area, Abbott added veratrine to the basic duad. Veratrine is also of value in these cases because it powerfully stimulates elimination by all routes—skin, liver and kidneys—and because, by relaxing vascular spasm, it relieves the heart of un-

necessary labor and therefore conserves its forces. We have thus two triad combinations, aconitine and digitalin in both, but one associated with veratrine for the sthenic cases, the other with strychnine arsenate for the asthenic forms.

These are the most commonly used weapons in treating fevers. They are given in minimal doses, and these are repeated every ten to sixty minutes until the desired effect has been secured, then often enough to sustain it. One may shift from one triad to the other, as the indications change. The needs for regulating the circulation, sustaining the heart and the vital forces and elimination are all met by these combinations.

Hyperpyrexia, fever at or above 105° F., demands the energetic application of cold, or in some cases venesection may be required. Otherwise the veratrine combination suffices.

Specific Fevers Should be Met by Specific Remedies.—Unfortunately, the earnest search for such specifics for many centuries has resulted in but five—quinine for malaria, mercury for syphilis, pilocarpine for sthenic erysipelas, the sulphides for gonorrhea and antitoxin for diphtheria. This paltry handful comprises the specifics for specific infections; and of these not all are universally accepted. Despite the claims of enthusiasts, others have as yet not won general acceptance.

Many other symptoms present themselves in various forms of fever, symptoms which are to be met with remedies especially suited to them; yet it must be noted that when the indications above described are recognized and effectively met, the difficulties which still remain are surprisingly small, complications and sequels rare, and in general the practician has to go back to the period preceding his adoption of scientific therapeutics to find instances in point. Insomnia, muscular aching, headache, delirium, the whole train of nervous and digestive phenomena, disappear or fail to arise when the toilet of the alimentary canal is carefully made. It is this observation that has led us to place such stress on the matter. The inference seems fair that the symptoms that subside when the bowels have been emptied and disinfected must have been caused by the absorption of fecal poisons.

One final observation—on the hygiene of the sick-room. The house and its surroundings must be made and kept right. Malignancy is prevented or cured by establishing a correct state of cleanliness in the patient's body and around him. Pure air, pure food and pure blood work wonders.

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HYDROTHERAPEUTIC AND OTHER PHYSICAL METHODS IN FEVER

In order to understand the physiological effects and therapeutic uses of hydrotherapeutic and other physical measures in the treatment of febrile conditions, it is necessary to have a clear conception of the biological significance of fever and the bearing of the latter on the clinical problem.

The Physiology of Heat-Production.—The term "fever" refers to a characteristic process which takes place within the machinery of the body. The sum-total of functions performed by the several parts and organs of the body is what we—so far as the outward manifestations are concerned—call *life*. The study of physiological processes within the animal economy of warm-blooded animals has taught us that these processes are necessarily dependent upon a certain degree of heat. Heat makes possible and accompanies the conversion of chemical elements into the forces and functions which constitute the life of the organism. Furthermore, we know that heat is the principal product of the metamorphotic and functional activity which takes place within the animal economy.

In the present state of our knowledge we can assume with a reasonable degree of certainty that heat and function, meaning by the latter the sum-total of force-manifestation within the organism, are dependent upon each other, are convertible into each other; that organic life, therefore, is a condition produced by a heat-making process within the organism.

We can deduce, furthermore, that function and heat-production are in direct proportion to each other. If we intensify the one, we *ipso facto* increase the other; if we depress the one, diminution of the other must necessarily follow. Since the functional activity of the organism, however, is concerned either in the taking-up of food (nutrition in its wide physiological sense) or in the expulsion of waste (excretion), it stands to reason that the degree of nutritive and excretive function is in direst proportion to the degree of heat present. A low degree of temperature means slow oxidation, retarded tissue-metamorphosis, and, therefore, slow nutrition and lessened function. This holds good in regard to the whole organism as well as to each and every part individually.

Heat-Production and Oxidation.—These physiological considerations enable us to draw a conclusion of momentous importance: If we can control (intensify or depress at will) the heat-producing process, then we can regulate oxidation, functional activity, nutrition and tissue-change. These strictly physiological premises embolden us to go even further in our conclusions. If we can accelerate or retard the chemicophysiological activity in the organism at large, or locally in any of the organs of the body, then we certainly have snatched from the hands of nature the magic wand which holds at bay the enemies of our bodies, which preserves our physical well-being during the onslaught of disease-producing germs and elements, which sustains our body in its integrity, and which enables the fittest to survive.

That magic wand is *fever*.

A Definition of Fever.—Fever is, as we at this late day are ready to admit, accelerated oxidation of the tissues of the organism, hastened nutrition. All the engines of the organism are working at full speed, large aggregations of slack and waste are hurled through the gateways of excretion, new food-material is devoured and consumed by the roaring furnace within. Finally the organism returns to its normal speed and amount of work, the vicious elements of disease have been eliminated, regeneration has taken place, health again supervenes.

That such a process of rapid oxidation (fever) should be accompanied by an increased amount of heat (elevated temperature) it is but natural to assume, in view of the previously quoted physiological laws governing the vital processes within the organism. That we can radically modify the processes of heat-production and by so doing necessarily affect oxidation and nutrition, that we can, consequently, arbitrarily bring about a fever-process even to the extent of causing local or general temperature to rise and fall, is an undisputed fact, and can be abundantly demonstrated be experiment.

Fever is Constructive, Restorative.—From what has been said it is clear that fever is *per se* not a destructive but a constructive process. It is a part of the restorative action of the organism in the latter's attempts to preserve its life and the integrity of its parts. From this point of view fever appears as an essentially curative agent. It is not the disease but rather a means to fight the disease, not pathologic but rather physiologic in character.

The outward manifestation and physical evidence of fever is *elevated temperature* which is the product of increased oxidation. The radiation of heat-units may become so intense that concentration or rather condensation of the radiating waste may take place. Heat would then be excreted through the skin in the form of vapor or even of a fluid (sweat). This is what is called diaphoresis. It is the most intense form in which heat-radiation takes place. We can readily understand why diaphoresis represents an efficient ally of the fever-process. When a fever-patient begins to sweat, the case is said to be taking a favorable course. Every old lady knows that a hot, dry forehead of a fever-patient is not a good sign. When beads of warm sweat appear on the forehead, the fever is said to be "breaking."

Two Fundamental Principles.—The physiotherapeutist bases his management of

fever upon two fundamental principles, to-wit:

1. The skin must be stimulated in order that the unloading of the organism through the skin may be facilitated and increased;

2. The deleterious action of pyrexia (not fever, but its product, high temperature) must be prevented by suitable means to control the degree of heat.

Under these two heads we can conveniently discuss the physiotherapeutic management of fever.

We naturally take it for granted that the physician who is applying these principles is familiar with the hygiene of the sick-room, especially so far as *fresh air* and *sunlight* are concerned. He should understand what is meant by *feeding a fever*. He should sustain the organism but not overload it. He should administer carbohydrate foods liberally and nitrogenous foods sparingly. The reasons therefor are clear to every physician who knows his physiology. He should not forget the absolute necessity of preserving the physiological equilibrium between the solid and fluid elements of the patient's body, which means that the patient should be given *fresh water* in liberal doses to make up for the loss of watery elements and aid in the flushing of the sewers of the body. All these things are taken for granted before any attempt is made to apply the two general principles stated above. The latter represents the basis of physio-therapeutic treatment of fever, as will be apparent from the following more detailed consideration of the questions involved.

1. The Skin as a Fever-Regulator.—In order to get the greatest benefit out of the excretory capacity of the skin, the latter must be clean. On general principles it is wise to begin the hydriatic management of a fever-case by giving a gentle lukewarm sponge-bath. It cleanses the skin and, by friction, stimulates the latter, i. e., it increases the active circulation in the skin, improves its vasomotor tone and augments the functional energy of the lymphatics. The patient is now ready to receive the full benefit of whatever physio-therapeutic applications are made. If the temperature does not rise higher than perhaps two degrees, and the general condition of the patient is good (pulse and respiration approximately normal, mind clear, bowels open), a sponge-bath, as described, may be given once or several times a day as a hygienic rather than a therapeutic measure. In this connection let me emphasize the great value of paying attention to the appearance and the general physical characteristics of the skin of the patient. The skin should be warm and convey a sense of moisture without being actually moist. In placing your hand on the skin and making even pressure, the skin should feel full and springy, not be baggy and slow to respond. A cold or clammy skin is a bad omen. It indicates impairment of the vasomotor tone. It is characteristic of renal and hepatic disease, tuberculosis and other wasting ailments. The skin is the sheet-anchor in all acute febrile diseases and is of the greatest prognostic significance. Some men possess a marvelously fine tactile sense and can prognosticate with remarkable certainty. It is a natural gift with some, but can be acquired.

In light fever-cases the fever usually takes care of itself and requires no special attention. It is, however, always wise to preserve the skin in its functional perfection. Many physio-therapeutic measures may be resorted to for this purpose. Gentle massage (effleurage) or fine and rapid vibration over a part of or even over the entire body-surface can be advantageously employed in mild fever-cases, especially if there is a tendency toward restlessness and insomnia. Exposure to the warm rays of the sun (sun-bath) is of great value in these cases.

If the thermometer registers 102 or more degrees, more energetic measures must be resorted to to stimulate the excretory function of the skin. A cold sponge-bath, applied with some degree of force, produces a powerful effect upon the vasomotor nerves of the skin. In discussing the theoretical points involved in hydrotherapeutic applications some months ago, we had occasion to explain what is meant by primary anemia, reaction and secondary hyperemia. When,

as a result of a cold sponge-bath, the stage of secondary hyperemia has been reached, the skin radiates more heat-units and, as a necessary consequence, the temperature within the body is reduced. The same principle governs the use of all hydrotherapeutic measures. It makes no essential difference whether we employ a cold sponge-bath, a cold moist pack, a cold douche, etc., the aim is always to produce an active secondary hyperemia in the skin and in this way increase the quantity of heat-units which radiate through the skin. If the skin is slow to respond, it might be necessary to help reaction along by rubbing, massage, etc. Sometimes the skin is very lethargic (non-reactive). If such be the case, it would be unwise to expect *reaction*. We do without the primary anemia which follows all cold applications, and use *hot* applications whereby hyperemia is brought about without a preceding anemia and reaction. In such cases the hot application is the fever remedy, truly a case of *similia similibus curantur*.

The overloading of the system with waste of various kinds (different kinds of autointoxication) which occurs in all febrile conditions, imperatively calls for the adoption of powerful means of stimulating skin-function. In these cases the different kinds of packs (cold, moist, sheet covered with a dry blanket) are of the greatest value. They are superior to immersion in water (tubbing) because they can be more accurately adapted to the requirements of the individual case and are more easily given. This holds good more especially in typhoid fever with protracted hyperpyrexia and severe brain-symptoms. The technic and physiological effects of these packs we have discussed on a previous occasion. Their employment can be combined with powerful stimulating water-applications, e. g. discreetly applied cold douches which have a wonderful efficacy in whipping up the flagging vital powers. It is needless to add that experience in the use of these powerful agents is the indispensable *conditio sine qua non*. Cases must be carefully individualized, especially with reference to the tolerance of the heart and the arteries. The damage which can be done by hydrotherapeutic applications is always caused by the abuse or misuse of an effective agent in the hands of an indiscreet operator.

2. The Control of High Temperature.—Fever (accelerated and intensified oxidation of the tissues) is accompanied by elevated temperature. When, after a hydrotherapeutic or any other physical application to the skin, the temperature drops, this phenomenon is due to increased radiation of heat-units through the skin, the latter having become more active. It is important to remember this physiological principle. In cases of sunstroke, for instance, we frequently find the temperature raised three, four or more degrees, the skin being dry and inactive. In many of these cases the high temperature is the source of immediate danger. The albumen of the blood and in the tissues is liable to coagulate, toxins form with extreme rapidity, the nerve-ganglia are on the verge of disintegration. To get rid of pent-up heat we stimulate the skin by rubbing, massage, vibration, hot or cold applications, etc. The object is to get reaction in the skin. This holds good in sunstroke cases as well as in cases of high fever. If a cold application is continuous, response on the part of the skin is prevented because of the depressing effect on the nerve-supply and on the vasomotors of the skin. Continuous tubbing in cold water, therefore, is not proper. Immersion of short duration, followed by vigorous rubbing of the skin, is the proper method to follow. This holds good in sunstroke, fever-cases, especially typhoid fever.

In many hospitals the tubbing method in typhoid cases is misapplied because it is misunderstood. The patient is immersed in cold water and kept there until the temperature drops. The patient is returned to his bed and falls asleep from exhaustion. The proper method is to immerse for a short time, return the patient to bed and, if necessary, force the reaction by vigorous rubbing. When the reaction takes place, it manifests itself by a warm, red skin and sweating. The heat-units are rapidly eliminated, the

temperature accordingly drops and the patient lapses into a refreshing sleep. The same principle underlies all reactive hydrotherapeutic applications, as fully explained in a previous lesson.

The Importance of Individualizing.—A water-application in any given cases is a concrete clinical problem and must always be adapted to the individual patient. Frequently we meet with idiosyncrasies or personal peculiarities which cannot be explained, but must be carefully considered. Intolerance to powerful cutaneous stimulation is sometimes encountered. In these cases stimulation must be mild. The substitution of hot water for cold water changes the reactive into a non-reactive application, as already pointed out. If the heart is weak or irritable, heroic stimulation of the skin by means of cold applications is contraindicated. In cases of disease of the heart and the arterial walls (arteriosclerosis, syphilis, etc.), reactive applications should be avoided. If there is involvement of the renal apparatus, the non-reactive applications are safer and more effective. If the patient's skin does not react promptly, the reactive applications require caution. In these cases massage or friction of the skin must be depended on to bring on the reaction. It is not infrequently the better plan to use non-reactive applications in these conditions.

The duration and frequency of an application should be regulated by the condition of the individual patient. No application should be carried to the point of exhaustion. If the elevated temperature is kept under control by a given hydriatic measure, the thermometer is the best guide as to the proper time when the application should be repeated and how long it should last. Frequently a draught of cold water, administered to the patient during the application, facilitates the constitutional effect. The water is readily absorbed and helps in a systemic "flushing," incidentally preserving the physiological equilibrium between solids and liquids in the body. In cases of extreme weakness, or even collapse, a cold spinal douche or a cold enema is frequently of great value.

The technical part of the various water-applications has been exhaustively discusseds in a previous lesson.

OTTO JUETTNER.

Cincinnati, O.

THE INFLUENCE OF THE DIGESTIVE CANAL UPON FEVER

With the condition of the human organism called fever, in the concrete, this article does not deal, but simply with the bearing upon the aforesaid condition of a departure from the normal condition and function of the digestive canal.

Since entering upon the practice of medicine, many years ago, I have been increasingly impressed with the importance of this bearing, and the imperative necessity of endeavoring to restore, as well as may be, the digestive canal to a normal condition and function, whatever may be the other factors concerned in the causation of fever. In practically all cases where fever is present we find evidence of a toxic condition arising from retention and absorption of substances formed in the intestinal canal, and in many cases an intelligently directed and properly executed effort to eliminate this condition, alone, will cause a prompt disappearance of the fever. Even when this does not happen the febrile condition will be ameliorated to the point of easy handling and many exceedingly disagreeable concomitant symptoms will have been removed.

What derangement of the digestive canal do we usually find connected with fever? Usually a lack of proper intestinal secretion for the first thing, and secondly, an increased amount of the fermentative products which are formed during improperly carried-out digestion. Then the lessened peristalsis due to the dryness of the bowel holds this fermenting mass and prevents it from being eliminated. The consumption of the body fluids due to the efforts of radiation of body heat causes what little bowel secretion is present, saturated with toxins, to be absorbed and general body poisoning results.

Headache, coated tongue, foul breath, bad-smelling skin exhalations, nerve-center

poisoning, marked by delirium and convulsive muscular action, all these should call attention to the digestive canal and direct our efforts toward the relief of the condition existing.

The indications are plain. Sweep out the bowel by means of properly selected laxatives—preferably salines, first administering cholagogs, such as calomel, podophyllin or iridin, followed by the free use of water internally both by the mouth and as enemata, and then give a well-chosen intestinal antiseptic, my personal preference being for the sulphocarbolates. Under such treatment you will get prompt amelioration of many of the troubles of which your patient complains.

The secretions will be reestablished, the distressing dryness of the mouth and throat will disappear, the headache will vanish, the action of the skin become natural, and with the thorough evacuation of the bowels and the establishment of a practical if not complete antisepsis thereof, the febrile temperature will either come down to normal or such a marked diminution will occur that the management of the remainder will be made much easier. It may be safely asserted that the free evacuation or elimination from, and establishment of antisepsis in the digestive canal is one of if not the greatest aid in the treatment of fever.

WM. C. POST.

Maquoketa, Iowa.

COMMENTS ON THE LESSON

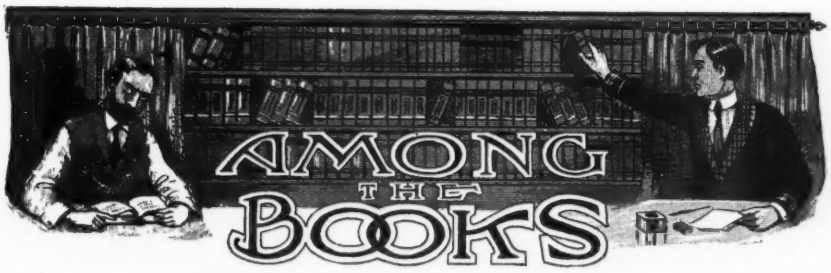
With this number we make a new departure. We shall hereafter study "Applied Therapeutics" in the Postgraduate Course. Next month we shall continue the study of "Fever," considering the various conditions in which rise of temperature is an important symptom, commencing with "Typhoid Fever," which will be the special topic for the November lesson.

We have on hand, thanks to the kindness of some of our good friends and contributors, a number of short articles on special phases of the treatment of fever. Dr. Post's little article in this number is a sample. These articles we shall print next month, in connection with others which we hope will come in by that time. We hoped to get them in this month but there wasn't room. All readers of CLINICAL MEDICINE are invited to contribute, so as to make these talks "among ourselves" of surpassing interest and value—veritable symposia.

Take as your subject some special therapeutic feature of the disease under discussion that appeals to you. For instance, we would like next month a good article on "Buttermilk Feeding in Typhoid," by a man who has had experience with its use in this disease—not a long article; a column or a column and a half is enough. Another man might tell "How I Treat Typhoid Delirium." Another might discuss "Intestinal Hemorrhage in Typhoid." Another "How I Care for the Heart." Many things will suggest themselves. The thing is *to do it*. Will you?

EXAMINATION QUESTIONS

1. Explain briefly how the body-heat is produced and how it is regulated.
2. What role does the skin play in fever and what may be learned from its careful examination?
3. Define fever and give a rational explanation of its phenomena.
4. What is the role of the secretory and excretory functions in fever, and what is the appropriate therapeutic handling of them?
5. Explain intermittence and remittence, using malaria and septicemia as convenient illustrations.
6. What is the highest temperature ever observed by you in a case of fever? What was the condition—describing case?
7. What are the most important general indications for the treatment of febrile conditions?
8. How does toxemia cause elevation of temperature, and in what way is it possible to eliminate or reduce this factor?
9. Give some suggestions as to the dietary treatment during fever.
10. What remedies are most useful in regulating the circulation and thus modifying fever, and how should they be combined and to what cases given?
11. Compare the action of veratrine with that of aconitine. Write briefly of the source, character and action of each.
12. Give the hydrotherapeutic treatment of mild febrile cases; of severe cases.
13. When should we use reactive and when nonreactive applications? Define these terms.
14. Tell the advantages, disadvantages and dangers of tubbing. What may replace it usually?



GANT'S "CONSTIPATION"

Constipation and Intestinal Obstruction. By Samuel Goodwin Gant, M. D., LL. D., of the New York Post-Graduate Medical School and Hospital. With 250 original illustrations. Philadelphia and London: W. B. Saunders Company. 1909. Price $7.50.

This book of 541 royal octavo pages will prove of great service to the general practician, who always has to deal with constipated patients. The author speaks from a large experience. In the etiology, diagnosis and treatment the author is very many-sided, taking in wide consideration the mental factor in all of these. While he does not rely much on the medicinal treatment, he gives to it two long and valuable chapters which will certainly be appreciated by all and especially by those who like "formulas." The author deserves special thanks for his detailed discussion of the many evacuant medicaments.

HARBAUGH'S "CAUSES OF DISABILITY"

Causes of Disability. As applied under Accident and Health Insurance Policies, with Special Chapters on Policy Forms, Advantages of Examining for Accident Insurance Companies, etc. Designed for the Use of Insurance and Fraternal Examiners, General Practitioners and Students of Medicine, Attorneys and Corporations. By Charles Hamilton Harbaugh, M. D., Expert Examiner and Adjuster, etc. Illustrated with 123 half-tones and 15 full-page plates, eleven in colors. Sold by The Spectator Company, 135 William St., New York. 1909. Price $6.00.

As the business and industries of the country increase with the increase of population, machinery will increase for shop, factory and travel and so of course will imperil life. Insurance against accidents and insurance of health will therefore become more common and physicians must be prepared for this change. Little instruction on insurance is as yet given in medical colleges and the efficient volume before us comes as an opportune supply for a just demand.

RITCHIE'S "HUMAN PHYSIOLOGY"

An Elementary Text-Book of Anatomy, Physiology and Hygiene. By John W. Ritchie, Professor of Biology, College of William and Mary, Virginia.

There is of course no lack of school physiologies, but, unfortunately, a large number of them are crude in literary style and inaccurate in scientific statement. This book seems to be in every way excellent. It is inductive in its method of presenting the subject, commencing with the cell and gradually leading from one part of the body to another. Practical application is given to the knowledge of the body wherever possible; for instance, there is an excellent chapter on disease-germs, describing in simple language how they cause disease, telling also how this knowledge of germs may be used in the prevention of disease. Naturally such a book has been welcomed warmly by the many health boards. Physicians who are interested in the education of children, as all should be, certainly should give this little book a careful examination with a view to its introduc-

tion in local schools. It is published by The World Book Company, Yonkers-on-Hudson, New York. Price 80 cents.

THE AMERICAN SCHOOL OF METAPHYSICS

Established in 1897. System completed in 1908. Business Department: 500 Fifth Ave., New York. Literary Department, 10 E. 66 St. 1909. Price $0.20.

This is a prospectus of the school in which Mr. Leander Edmund Whipple teaches the healing of diseases by the mind instead of by material means, the "adjustments" (of any deviations from health) "being made and carried out in thought for him (the patient) by the operator." This is the claim put black on white, and we have nothing to say here pro or con, only this that it will cost you $350.00 and some years of reading or hearing to ascertain the truth of this claim.

HALDEMAN'S "CHRISTIAN SCIENCE"

Christian Science in the Light of Holy Scripture. By I. M. Haldeman. Published by The Fleming H. Revel Company, New York, Chicago, Toronto, London and Edinburg. Third edition. 1909. Price $1.50.

We intend to review this book, not that deluding system yclept Christian Science. To do the latter would involve the indictment for folly, fraud and social mischief all the respectable men and women who accept this, more correctly named, Unchristian Ignorance. Thank God—the very personal God—that people are usually better than their religious and antireligious professions, and that because our *modus vivendi* is based upon the tried past beliefs of society. As a book, therefore, I recommend it because it confines itself to the one point, to wit, that Christian science is, in every possible respect, opposed to the Christian scriptures, to the Christian God, to Christian morals and to the Christian religion. These things the author has established beyond controversy. He does not take up the claim of Christian science to be science, and for this he is to be praised; he is not a scientist, but evidently a biblical theologian and a good common-sense logician. As a writer, I am inclined to range him with the tersest of terse English writers, as the following lines (from page 9 of the book) will show: "It would not have been difficult to have collated and freely commented on some of the sayings of "Christian Science and Health," which seem like a caricature on human intelligence. It would have been quite easy to have made a chapter altogether picturesque in this respect. I have not done so because under the cap and bells which sometimes show themselves in its pages there lurks always the face of the Evil One who can hiss through a serpent, sin through a woman, shine like an angel, be a harlequin in logic, and a devil behind it all."

FOWLER'S "INFANT'S FEEDING"

Infant Feeding. A Practical Guide to the Artificial Feeding of Infants. By J. S. Fowler, M. D., F. R. C. P. New York: Henry Frowde, Oxford University Press. 1909. Price $1.50.

We commend Dr. Fowler's guide to the young physician especially. It is a *multum in parvo*, scientific to the core, and practical on every point. It is well illustrated and the presence of many useful tables makes the book more desirable.

WILMAN'S "MIND HEALING"

Compared with the Miracles of Christ and His Disciples in the Healing of the Afflicted as Viewed by a Physician. By Reinhold Willman, M. D., Saint Joseph, Mo. Published by The Advocate Publishing Company, 301 N. 11th St., Saint Joseph, Mo., 1909. Price, $1.00.

The reader will find here much desirable discussion, both from a strictly scientific and also from a biblical point of view. The author takes up each disease which is reported to have been healed by Christ and the Apostles and discusses it medically as to etiology, symptoms and treatment, and shows that the case in point was not a so-

called mind cure. He takes firm ground against the claims that Christ and His disciples enjoined it upon future generations of their followers to be healers of the sick. Then he takes up suggestion, hypnotism, mind and spiritual healing, Dowieism, theosophy, Eddyism, (giving quotations from "Science and Health," with comments), and Emmanuelism. These are carefully examined and analyzed.

The reader will meet with some quaintness of style in this book, but this should not detract from the true merits of its contents. There is many a believing physician, and many an unbelieving one, who is annoyed at the preposterous assumptions made by mind healers, who will welcome a careful examination of their claims, made in the light of modern science.

SPURZHEIM'S "PHRENOLOGY"

Phrenology, or the Doctrine of the Mental Phenomena. By J. G. Spurzheim, M. D. With an introductory by Cyrus Elder. Revised edition from the second American edition in two volumes published in Boston in 1833. Philadelphia and London. The J. B. Lippincott Company. 1908. Price $3.00.

I was surprised when I saw the announcement of this book, and begging the pardon of all advanced thinkers of old thought and of the new thought of spiritual materialists and material spiritualists, I confess, agreeably surprised. Is there a demand for such a sober-minded, deductive-thinking, fact-stating, non-evolutionistic, mental-faculties-classifying book in our age of ever-denying, doubting, destroying and dumfounding? It must be so, I rejoicingly concluded, or else such an old, steady house as the Lippincott's would not be its publishers. I only regret that anything of the Boston, 1833, edition was omitted. And I was edified in reading the introduction by Cyrus Elder —edified because I saw that I am not so isolated as I thought I was in my way of thinking, of taking realities to be real and persons to be individualized individuals.

In contrasting the phrenology of Spurzheim with the psychology of Herbert Spencer, Cyrus Elder, in his Introduction, makes the following statement, than which no better could be framed:

"Phrenology defines the mental faculties and their special organs in the brain without inquiring how they were made; and with respect to faculties which are common to man and to animals, it holds that they have a corresponding location in the animal's brain. A mental faculty is a finished product, it never changes its nature nor does the organ change its place; the newly acquired bit of brain is always in a higher place, it is always the dwelling-place of a new and higher faculty, and, however it may have been acquired, it is never lost. The evolution of mind to its completion in man is concurrent with development of brain, and thus its ascending steps are definitely and ineradicably marked by the stages which are the final halting places of the less favored animals."

Is it not worth while to know this even if it is a sixty-year-old truth?

GRANDIN, JARMAN AND MARX'S "OBSTETRICS"

A Textbook on Practical Obstetrics. By Egbert H. Grandin, A. B., M. D., of Columbus Hospital, New York; with the collaboration of George W. Jarman, M. D., of the General Memorial Hospital, and Simon Marx, of the New York Postgraduate Medical School. Fourth edition, revised and enlarged. Illustrated with 47 full-page photographic plates and 116 illustrations in the text. Philadelphia: F. A. Davis Company. 1909. Price $4.50.

True to its title, this book is thoroughly practical, and any point in obstetrics upon which you may desire to get the consensus of the majority of the profession is readily found. The book is divided into four parts: Pregnancy, Labor, The Puerperal State, Obstetric Surgery. The illustrations reallly do illustrate and the text elucidates, and in its 525 pages there will not often be found a paragraph stating a fact or an opinion that could be stated in smaller compass. That it is up to date was to be expected.

And, yet, "nevertheless I have somewhat against thee," because the authors are unjust in their condemnation of scopolamine-morphine anesthesia, a new method which has proven a blessing to thousands of parturient women. "Scopolamine is antagonistic in its action to morphine," we read, but in this very fact lies the advantage of this combination, in that its component parts in tried and well-ascertained proportions have the wonderful power of producing sleep and unconsciousness of pain. As to the contradictory reports which we meet in the comparatively scant literature of this beneficent agent, they are due solely to the fact that the materials employed were not pure, or, what is worse, that the dosage was much above the well-ascertained quantity required.

Writing on the value of morphine in combination with scopolamine Dr. Max Cremer says: "Every ill success is excluded when the two fundamental conditions are fulfilled (viz., purity of ingredients and low dosage). We possess in the scopolamine-morphine solution a means of freeing the parturient mother of her pains without harming either her or her child or in any way diminishing the parturient action." And this he says in agreement with Drs. Laurendeau of Canada, Gauss and Kroenig of Freiburg, besides many other good and reliable authorities. We urgently recommend to the author of the last two paragraphs of Chapter XI the reading of the short essay by Dr. Max Cremer entitled "Entbindung ohne Schmerzen," published by Commissions-verlag von Gebrüder Lüdeking of Hamburg.

CADWALLADER'S "OBSTETRICS"

Handbook of Obstetrics. By B. Cadwallader, A. M., M. D., of the University of California. With 104 illustrations in the text. Philadelphia: F. A. Davis Company. 1908. Price $2.00.

A thoroughly modern book, useful for a practising physician who desires to become acquainted with the latest theories about conception, pregnancy, and embryology. The author is an independent-thinking physician, earnest, moral to the last cell—as we must say now instead of "to the bone." He is an evolutionist and its doctrine of descent helps him over in some of the obscure questions of generation. If it can not assist him he is honest enough to say "I don't know" or even " we don't know." He is refreshingly honest in expressing his views of disapproval of the present wandering away of woman from her proper sphere which no one else can occupy for her.

RICE'S "ELECTRICITY IN GYNECOLOGY"

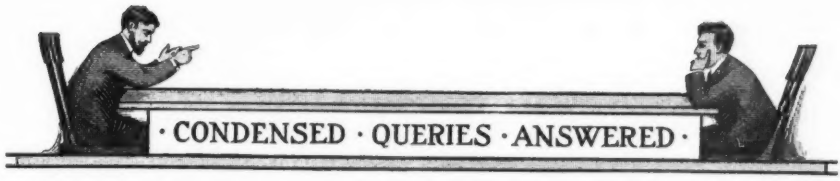
Electricity in Gynecology, The Practical Uses of Electricity in Diseases of Women. By May Cushman Rice, M. D., Professor of Gynecology and Clinician in the Illinois School of Electro-Therapeutics, member of the Chicago Medical Society and the American Medical Association. Illustrated. Publishers: L. I. Laing & Company, Chicago, Illinois. Price $1.00. 1909.

This book, while small, contains more really practical and helpful matter concerning the electrical treatment of diseases of women than most books on this subject which are twice as large. There are simple directions regarding the different electrical modalities and their rational therapeutic employment; helps in technic, such as simple tests for polarity, the preparation of the patient, the best lubricants, the selection of electrodes, how to produce cataphoresis, etc.

A subject which interested us greatly, and was interestingly discussed, was the cataphoretic employment of thiosinamin, in the treatment of cervical lacerations, in which remarkable success was obtained by this method.

Dr. Rice's suggestions for the treatment of the abnormalities of menstruation, uterine inflammations, the vaginal neuroses, ovaritis, salpingitis, uterine carcinoma, constipation, etc., are exceedingly valuable, and many of her ideas are novel, while all are marked by great practicability.

This is a book which every physician who has an electrical outfit (or contemplates getting one) should purchase. It will be found a very profitable investment.



PLEASE NOTE

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report the results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

QUERIES

QUERY 5491.—"Incontinence of Urine." J. H. B., Michigan, has, for a patient, a girl-baby six months old troubled with incontinence of urine. She urinates frequently from fifteen to twenty times or oftener in the twenty-four hours—usually every hour and not infrequently two or three times only a few minutes apart. The baby is healthy and otherwise well, bowels regular. The mother nurses her.

It is a little difficult to prescribe for a case of incontinence of this kind without knowing something more definite about conditions. Frequently the following combination proves effective: Atropine valerianate, gr. 1-500; strychnine valerianate, gr. 1-750; delphinine, gr. 1-134; thuja, gr. 1-4. For a child of this age you may dissolve four such doses in twelve teaspoonfuls of water. Give 30 drops three or four times daily.

It will be well to examine the urine of this child. How about the mother's milk. Does it seem to be normal? What quantity of milk does the child ingest? Frequent urination in a child of this age is often a very unimportant matter, indeed can hardly be regarded, alone, as a pathological condition. See if there is any irritation of the external genitalia or rectum. A very small specimen of urine will enable you to determine existence of hyperacidity, alakalinity, etc.

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QUERY 5492.—"Action of Calomel and Podophyllin." M. A. N., Tennessee, tells us that "the separate granules of calomel (gr. 1-6) and of podophyllin (gr. 1-6) usually prove more effective than the compound tablets of calomel, gr. 1-6; podophyllin, gr. 1-6, and bile salts, gr. 1-12," and then asks, "why should the drugs thus given separately act better than the same drugs in combination?"

We have continually pointed out the desirability of administering the *single drugs and combining them ex tempore as may be most desirable* in any given case under treatment.

Calomel, gr. 1-6, and podophyllin, gr. 1-6, hourly or half hourly for three or four doses, is the very best prescription of its kind we know of. Sometimes calomel, podophyllin and bile salts together are indicated, but bile is *not always* a desirable addition. On the other hand, hundreds of physicians inform us that the combination of calomel, podophyllin and bile extract is "without a peer" as an hepatic stimulant aperient.

It is always best to select from the single principles the exact remedies in the exact proportions as may be considered indicated. In general practice, however, certain combinations have proved useful so often that many physicians prefer these ready-made compounds because they save trouble, while to a certain extent they aid those not yet thoroughly familiar with active-principle medication. Thus, for instance, the arsenates of iron, quinine and strychnine with nuclein can hardly be improved upon. Various digestives and diuretics are still other examples of drug-combinations found useful every day. Buckley's uterine tonic may not be precisely scientific but we never yet knew a physician to give it once who did not

continue its use. It does the work, meeting as it does the peculiar grouping of clinical symptoms which are present in so many women. Frequently, of course, we may control the morbid conditions with any two or three of the drugs contained in these compounds, and the thoroughly scientific practician selects just those remedies from his chest and gives just a sufficient of each drug to obtain the results he desires.

Give calomel, gr. 1-6, and podophyllin, gr. 1-6, or calomel, gr. 1-6, and leptandrin, gr. 1-6, when conditions are distinct, but if you are not absolutely positive in this regard and desire to administer an active hepatic stimulant and laxative, give calomel, podophyllin and bile salts, as per above, repeating the dose once or twice, and follow with a laxative saline, and rest assured of results.

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QUERY 5493.—"Picric Acid in Burns." F. R. B., Iowa, asks: "Have you had any experience with the use of picric acid in burns? What strength solution should be used and is there any particular danger, and could it be used over a large surface? Any information which you may give me will be appreciated as I am unable to find the desired information in my medical books."

Picric acid is an extremely useful preparation in burns but it does not in our estimation equal pure carbolic acid neutralized with alcohol. A picric-acid gauze is obtainable for immediate use in extensive lesions. A 1- to 2-percent ointment is also used by Willems of Ghent.

This solution will be found satisfactory: Picric acid, 75 grains; alcohol, two ounces; distilled water, one quart. This relieves pain and maintains an aseptic surface. The use of picric acid should be discontinued as soon as granulations form. Bear in mind also that the stain following the use of picric acid is very hard to remove. It can be used over surfaces of considerable size without danger.

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QUERY 5494.—L. B. S., Oregon, writes: "Please instruct me what to do with a leg swollen above the knee, in a woman being treated for a luetic taint. After rising in the morning it swells, and later in the day goes down again of its own accord. This keeps up. The patient had a similar trouble a good many years ago, but on the other leg and in the popliteal space. In that case there was a tumor; the patient had it opened and the serum let out and there was no more trouble. She has had this now for a week and is getting no better. Would you massage with mercury and give biniodide internally?"

It is impossible for us to prescribe for this patient without a clearer idea of the trouble. Are you quite sure there is a syphilitic taint? If there is any question of the fact and the patient can afford it have a Wasserman test made. In the meantime we can only suggest that you place the woman on stillingin, iridin and rumicin, given in small doses every three hours; with some good "antisyphilitic" combination (for instance one containing mercury biniodide, arsenic iodide, iodoform and phytolaccin) every four hours. Apply to the affected leg compresses wrung out of a potassium-iodide solution and if possible two or three times a week drive it in by applying the negative pole of the galvanic current. As soon as we have a specimen of the urine and a clearer idea of conditions we will prescribe further.

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QUERY 5495.—"The Tongue in Health and Disease." C. A. S., Virginia, inquires: "Is there a work published concerning the condition of the tongue in health or disease, the causes, and treatment, as well as its clinical significance?

"What will clean up and keep clean a persistently furred or coated tongue, one that stays coated all the time; broad, flabby and moist, with a bad taste in the mouth every day in the year?"

Read the chapter on "The Tongue and Its Appearance in Disease" in Candler's "Every-Day Diseases of Children." It gives a wealth of information on this subject in a very small compass. We do not know of any special book on this subject.

A persistently furred or coated tongue, broad, flabby and moist, evidences autotoxemia; also is noted in chronic catarrhal disorders. White fur and broad tongue,

more or less marked, hepatic disease, colitis, constipation, erysipelas, lithemia, gout, gastric irritation, etc.

You will probably find this patient's urine highly acid and the condition of the tongue taken with the urinary findings will enable you to outline a positive course of treatment. Give blue mass and soda, 1-2 grain each, hourly for four doses at night, a saline laxative the next morning, and some alkaline combination with a glass of water, and some good digestive before meals; also bile salts and pancreatin after meals. This will probably cause marked improvement in a week or ten days. Nux vomica and capsicum an hour before meals might be added with advantage.

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QUERY 5496.—"Enuresis Nocturna."—W. G. A., Kentucky, asks for "the best treatment" for enuresis, in a girl 15 years old, who is a nervous wreck. The doctor thinks her condition is due to atony. She also has diabetes.

In such a case as this it is imperative to have a full urinary report, and in any particularly difficult or rebellious case the pelvic organs and external genitalia require attention.

As you know, patients afflicted with diabetes frequently suffer from enuresis nocturna. Suppose you give us a concise but full description of the child's physical condition after making a careful examination. At the same time send us a specimen of her urine.

We would suggest, on general principles, the use of an "incontinence" combination, to consist of atropine valerianate, strychnine valerianate, delphinine and thuja; also special treatment suited to the diabetic condition, including careful dieting, a salt sponge-bath at night and plenty of open-air exercise. You do not state whether this girl has matured. What is the family history? Give us all the information you can, Doctor, and we shall be only too pleased to suggest definite medication.

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QUERY 5497.—"Tapeworm."—C. B. H., Mississippi, writes.: "I have a patient, white, female, seven years old, who has tapeworm. I have twice given a tapeworm remedy (consisting of malefern, croton oil, chloroform and castor oil); got 30 or 40 feet each time. I gave it about six weeks apart. Today the parents bring the child back and say it is again passing sections of worm one to two feet long, and yesterday it had a vomiting spell when the worm began to come out of her mouth, and her mother says she pulled out a piece over twelve inches long. I have never come in contact with the tapeworm in the stomach. Write me about it and give treatment."

The possibility of tapeworm existing in the stomach has been very seriously questioned and emphatically denied. Strings of mucus are often thought to be worms by the laity. Reverse peristalsis might, it is true, cause the tenia to enter the stomach and, naturally, together with fecal matter it might be expelled during the act of vomiting; but the habitat of the tenia family is in an alkaline medium. Next time "worm" is vomited have it saved.

Let us suggest that you give the tapeworm remedy forty-eight hours after thoroughly cleaning out the bowels with calomel and podophyllin, 1-6 grain each, hourly, for three doses at night and a saline or a dose of castor oil the next morning. The following is our usual technic:

Into a previously warmed cup pour an ounce or two of milk, just hot enough to be swallowed comfortably, and in a second cup pour an equal amount of milk. Upon the milk in one cup pour half the remedy. Let the patient swallow it and immediately swallow the milk from the other cup. In this way the medicine is not tasted. Two hours later give the other half in the same way, and if the bowels do not move and the worm pass in two hours or longer, give a good dose of castor oil.

Have the stools voided into a pail of water so that the worm may float up, and if it remains pendent from the bowel, have it wound gently about a stick or piece of twisted paper as you would wind tape upon a bobbin. This avoids breaking off the head and one or two segments of the neck. If

this happens, you are liable to have a full-grown worm again in three or four months. Instruct the patient how to recognize the head, which, as you know, looks very much like the E string of a violin chewed flat between the teeth with two little ink dots upon the flattened portion.

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QUERY 5498.—"Frequent Menstruation." S. S., South Dakota, has a girl patient, 16 years old, who is bothered with her menses coming on about every two weeks, and nearly every time she rides in a buggy. Everything seems normal, but this annoyance. A remedy is wanted for this trouble.

Irregularity of menses is a condition which may be due to any one of several causes. Give us some ideas as to the physical condition of this patient. In the meantime give her as a uterine sedative a combination of helenin, viburnin, dioscorein, gelsemin, avenin and scutellarin for ten days prior to the expected period. Examine the rectum. When did this girl mature and what is the family history? Is there possibility of a hemorrhagic diathesis?

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QUERY 5499.—"Hysteria." J. A. C., Arkansas, reports the case of a girl of seventeen, no history of tuberculosis or syphilis, who some months ago got wet in a rain and took a fever which has lasted most of the time since. Weight has fallen from 127 to 90 pounds. Appetite good. Little cough. Menstruation regular but scanty. No glandular enlargement. The peculiar feature of the case is that about three weeks ago "she took spells of moving her right arm rapidly in a horizontal position, which she can not prevent, and she will do this even when she straightens her arm. Later her left arm commenced to take similar spells, moving in the opposite direction and up and down, and it continues to do it occasionally. Still later her feet take spells of moving up and down when she is in a chair and presses on her tip-toes. She can control this by pressing down on her heels."

These peculiar spasmodic movements are clearly of hysterical origin. They can undoubtedly be arrested by suggestion, combined with physical measures severe enough to impress her profoundly. For instance, the doctor might put a blister, or a succession of small blisters, over the spine, at the same time telling the patient that these, with associated treatment, will *positively* cure her of these movements. The pain of the blister will reinforce the verbal suggestion.

There is some physical trouble at the bottom of this case. The lungs, especially, should be carefully examined and a sample of sputum secured and searched for tubercle bacilli. The possibility of a malarial infection should not be forgotten, and the blood test made for the plasmodium. Get at the essential trouble, then build her up.

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QUERY 5500.—"Pellagra." W. H. L., North Carolina, asks us to tell the cause or causes of pellagra and describe its symptoms.

This subject was discussed at length, editorially, in the September number of CLINICAL MEDICINE, pages 656 and 657. It will pay our readers to go through these articles carefully. Newspaper reports show that this disease is more widespread than was at first thought.

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QUERY 5501.—"Aphrodisiac." R. C. H., Ohio, says that he is in quest of an aphrodisiac tablet, a combination with yohimbin. He wants to know about it.

We no longer recommend yohimbin, our own experience leading us to consider it an extremely unsatisfactory remedy. Despite the laudations of German and Russian clinicians yohimbin has very generally failed of successful use in the United States. There may be a particular type of sexual-debility patients who are benefited by its exhibition, but we have never been able to discover it. The best aphrodisiac tonic combination we have found consists of strychnine hypophosphite, phosphorus, cornin, cactin and nuclein. We often add lecithin and sanguinarine. These produce results in nine cases out of ten. Nuclein may be injected *per urethram* or applied *via membrana preputialis*.

If the doctor cares to describe closely the conditions present in any particular case

we shall be only too pleased to make further suggestions.

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QUERY 5502.—"Paralysis Agitans." M. L. G., Illinois, describes his experience with a case, as follows: "I have under observation the case of a woman of French descent, 74 years of age, suffering from paralysis agitans. She is naturally eccentric, and has been addicted to nerve-storms all her life; has been affected by her present ailment three or four years. The only treatment for the condition has been hyoscine, of which she is at present taking about 1-500 grain daily. Other treatment have been attempted by numerous physicians, but the patient manifests a morbid fear of all new remedies, and this mental or hysterical condition causes this to be an exceedingly difficult case to manage.

"I have been administering to this woman atropine sulphate, gr. 1-250, at first every two hours, but now three times daily, with the arsenates of iron, quinine and strychnine. This treatment has been given one week. The patient continues to take her hyoscine, but has now promised to try to substitute one dose of hyoscyamine for hyoscine, in an endeavor to eventually break off the hyoscine habit. The effect of the hyoscine seems to the family to be largely mental, as the patient becomes easy in her mind as soon as she has swallowed the remedy; but the tremors have apparently never been mitigated by it. I should like your opinion as to atropine in paralysis agitans. Would it be well to give strychnine with the atropine? Could atropine be given over a considerable length of time, without deleterious effect, if kept always within physiological limits?

"This patient also takes, three times daily, 4-grain pills of asafetida. Kidneys acting well, but bowels require urging. Do you consider hyoscine a habit-drug? Am anxious for your opinion upon this question, as I have heard it disputed."

We do not consider hyoscine a habit-forming drug, but we do not think it desirable to continue its exhibition for indefinite periods, except in incurable cases; when such a condition is present the tremors can be better controlled by the combination of hyoscine with morphine, pilocarpine nitrate, caffeine arsenate and cactin. Keep the bowels thoroughly cleaned out and push passiflora in full doses. Lecithin, zinc phosphide and avenin should be given for possible curative effects.

Atropine should be useful from a theoretical point of view, but it is hardly adapted to long-continued use on account of the discomfort it causes the patient. We hardly think strychnine indicated, since it causes an increase of irritability while sedation is desired.

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QUERY 5503.—"Hematuria." W. J. T., Illinois, says that one of his patients passes three pints urine daily; the morning urine is normal, evenings it contains blood. Where does the blood come from, bladder or kidney? Is it due to stone, uric acid or phosphates? The patient's symptoms are merely slight distress on urinating and the presence of blood in the urine after being on the feet all day.

Laboratory report on this urine shows considerable indican, high acidity, plenty of hyaline casts, and uric acid present in large quantities. We cannot, of course, tell just where the blood comes from, and there is none in this specimen; but from the immense amount of uric-acid crystals and urates we should suspect the presence of stone. This may be in the pelvis of the kidney or in the bladder. The presence of casts is suspicious. A very careful examination is required here, and the cystoscope should be used.

The hyperacidity and autotoxemia should be controlled by alkalis, with intestinal antiseptics and eliminants, an hour before meals. Give some good digestive combination. Arbutin may be given in addition and after a week or two calcium and lithium carbonates should be pushed, with a good preparation of hydrangea. More data are required for greater help.

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QUERY 5504.—"Persistent Diarrhea." D. A. B., Kentucky, has a case of chronic

diarrhea in a woman past middle life, which has grown rapidly worse for the last four years. There is no pain whatever. No rise of temperature; considerable loss of flesh; no distention of bowels; heart good; no headaches; kidneys in good shape. The only symptoms are the diarrhea which becomes at times so bad and continues until only clear water passes, not staining a cloth. If she eats any solid food it will bring on an attack of this diarrhea.

Diarrhea may be caused by any one of several serious underlying conditions and in order to cure the symptom we must recognize and remove the cause. Suppose you send us samples of feces and urine. In the meantime study the disease and its treatment in the "Text-Book of Alkaloidal Practice."

The first thing is to empty the inflamed bowel, to cleanse it and to keep it aseptic, deplete the swollen tissues and relieve the intense hyperpyrexia.

We would suggest on basal principles calomel, podophyllin, iridin, administered in small doses every half hour for four to six doses. Follow with small doses of a saline laxative every two hours until you are quite sure that the bowel is clean and empty, then with the patient in the knee-chest position flush with three pints of cool decinormal salt solution. Allow this to be voided and then through a colon-tube pass into the bowel a half pint of this solution: aqueous extract of hamamelis one ounce, aqueous extract of calendula one ounce, water to make one-half pint.

If relief is not very apparent in three or four days use instead of the calendula and hamamelis one grain of silver nitrate in a half pint of water. Be very careful in inserting the tube, lubricate thoroughly and inject slowly as soon as the point of the tube arrives at the sigmoid flexure. The patient must be kept in bed. Absolutely forbid straining.

As soon as you have the bowels clean and have thoroughly irrigated two or three times (the patient having rested quietly for at least twenty-four hours) exhibit at once one grain of emetine, dry or with just a mere mouthful of water to enable it to be swallowed. The patient must lie absolutely still and if there is any nausea, must try to prevent vomiting. The medicine may come up. If so, try again in two or three days. If, however, it is retained you will probably have no further trouble with the dysentery. If the stomach is particularly irritable inject a small dose of hyoscine and morphine before exhibiting. Usually the patient falls asleep fifteen or twenty minutes after taking the dose and on awaking will void one or two green, filthy stools. Repeat the dose in twelve or twenty-four hours, according to conditions, then give three times daily hydrastin, hamamelin, collinsonin, and half an hour before meals and bedtime some good digestive combination.

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QUERY 5505.—"Intermittent Fever." B. F. D., Florida, writes: "I have just dismissed two cases of intermittent fever, one of eight days' duration and the other of twenty-one days' standing. Both cases up to the eighth day were treated exactly alike, except that to case one (which was a little girl six years old) I gave nuclein two drops before breakfast and at supper-time, and her fever left her, and temperature became normal on the eighth day. I did not have the nuclein for the little boy of eight years and his fever ran for twenty-one days in spite of all my efforts. Was it the nuclein?"

For many years we have pointed out the importance of nuclein in acute diseases and infections. Children particularly respond to it well. In acute infections, wherever we desire to raise the opsonic index and increase phagocytic activity, we should give large doses twice daily, preferably by the subcutaneous route, thus rapidly securing hyperleukocytosis. In chronic conditions the small dose three times daily is preferable.

We suggest that readers of CLINICAL MEDICINE report to us, at once, other similar experiences with this remedy; or that they undertake clinical investigations to help us in determining further its exact field of usefulness. We believe it a very remarkable remedy.